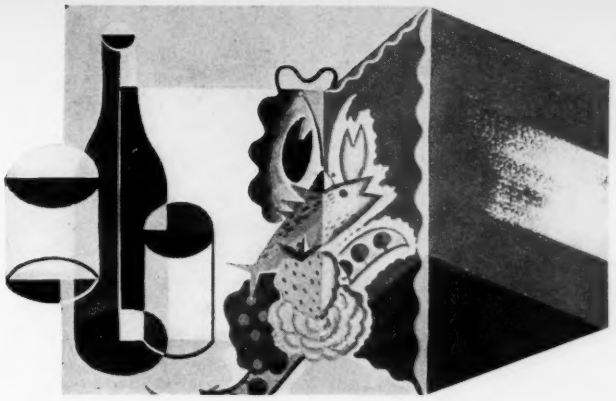


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DESIGN PRINCIPLES

SECTION ONE

Pages 5 to 30

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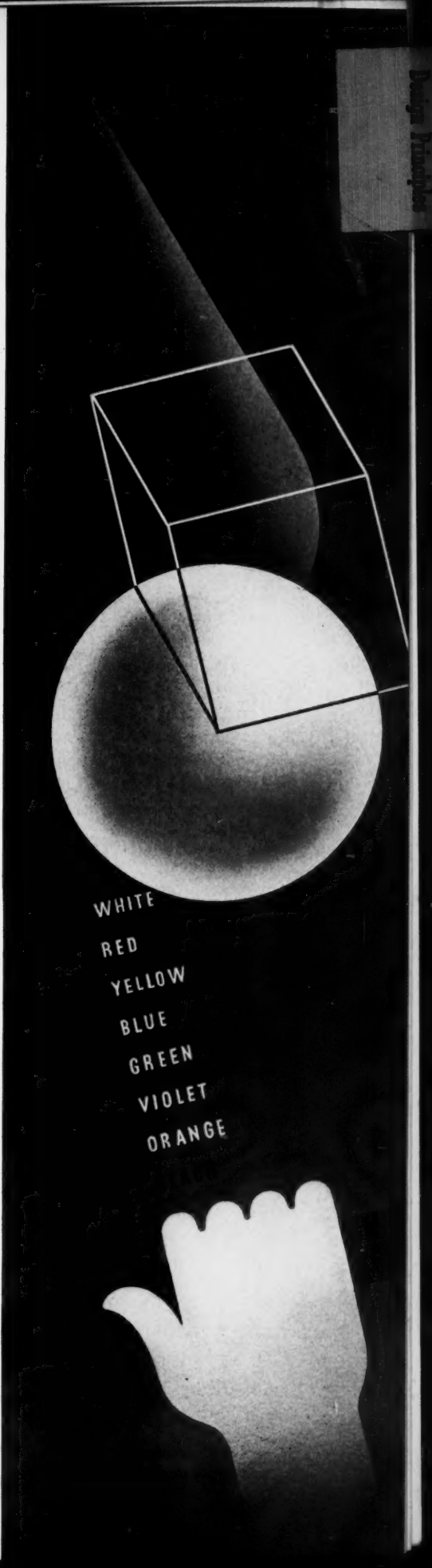
PRINCIPLES OF PACKAGE DESIGN

SELECTION AND USE OF COLOR

PACKAGERS AND THE LAW

DIRECT COLOR PHOTOGRAPHY

TESTING AND ADVISORY INSTITUTIONS



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Acknowledgment To Contributors

The Packaging Catalog, being the encyclopedia of the packaging industries, naturally represents the work of many hands. We have attempted to allot full credit to those who have aided us in the preparation of this, the twelfth annual edition.

Articles written by outside contributors bear the names of their authors immediately under the article titles. Contributors of photographs and drawings are credited in illustration captions. But hundreds of others who have aided us with information and advice unfortunately cannot be given any formal recognition other than that contained on this page.

To all those who have helped to make this edition of the Packaging Catalog more complete and more useful, we wish to take this opportunity of extending our sincerest thanks, in the hope that they will find their reward in the quality and completeness of this volume.

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Principles of Package Design

The designing and planning of packages is a strictly utilitarian art. The package has certain definite functions to perform and a package design may be judged—in the final analysis—only by the degree to which it performs these functions well or badly. It is true that a package may be viewed as an abstract work of art. Certainly many bottles and jars, many molded containers and printed or lithographed cartons represent artistic achievements of the highest order. But art, in such instances, is merely a tool of merchandising—one of the many factors going towards the making of a successful package. In some instances, deliberately crude "art" will make a better package or a more successful one.

Thus the process of package design must consist, first, in the analysis of the functions of a proposed package and, second, in the establishment of the necessary series of compromises which will provide the maximum possible number of desirable package functions within necessary cost limitations.



Package Functions

1. **Transportation.** The package must serve as a means of transporting a unit of merchandise from the point at which it is converted from bulk, through time, space and the hands of intermediaries, to the point at which the last bit of the product is utilized by the ultimate consumer.

In the case of almost every product, the probable conditions of transportation can be accurately forecast. Freight classifications and rates are ascertainable in advance. Transport and handling hazards are predictable within fairly close tolerances and conditions of handling and use may likewise be anticipated. Thus the first requirement of any package must be "that it insure the safe transportation of the maximum possible percentage of all units packed at a minimum possible cost."



2. **Measurement.** An increasingly important function of the package relates to the measurement of the product. Many of our familiar terms of measurement—such as the bushel, the peck and the quart—originally developed as packaging terms. One of the major reasons why consumers prefer packaged to bulk goods lies in the fact that the package guarantees an accurate measurement upon which the consumer may judge the comparative value of competitive merchandise.

This factor of measurement is being increasingly regulated by local, state and national authorities. Thus the new Federal Pure Food and Drug Act specifically provides for notations of net weight or contents on food, drug and cosmetic items and may yet be interpreted as restricting the use of odd-size containers or containers not customary in a given trade or industry.

Rule No. 2 for the packager therefore reads: "Provide an accurate means of measurement of the product and capitalize, to the fullest possible extent in your design upon presence of this means."



3. **Preservation.** In varying degrees, all products are susceptible to certain hazards between the time of their manufacture and the time of their ultimate consumption. It is a major function of packaging to provide protection against these hazards.

The package designer will carefully canvass all possible hazards before deciding upon the materials, the shape and the structure of his proposed package. He will judge these hazards in the order of their probability and of their importance as deteriorating factors. He will then canvass the field of packages and packaging materials, securing those materials and methods of packaging which will afford the greatest possible degree of protection against the largest possible number of probable hazards. He will not try, in most cases, to achieve the ultimate in protection—100 per cent protection against every possible hazard. He will try, rather, to secure the maximum possible protection consistent with community health and well-being and consistent with cost.

Obviously, it is in the community's interest—and hence in the interest of the packager—that such products as milk or children's foods or, in fact, all items for internal home consumption—be afforded an extremely high degree of protection against contamination and germs. Yet, even in such instances, the package planner must consider cost and other factors such as, for instance, the time factor. The average paper or glass milk container is designed to provide fully adequate protection for its delicate product within the time limit of its probable use. No one would expect a milk bottle to preserve its

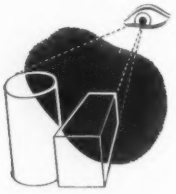
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product under exposed conditions for a month or a year, for the very term "fresh milk" implies a limited time element. In contrast, the can utilized for condensed or evaporated milk is a package definitely expected to provide protection for an indefinite length of time and hence must be planned and judged accordingly.

Package protections fall under four main groupings:

a. Protection against atmospheric and external hazards. Here packages can be designed to give protection against such hazards as moisture, dryness, heat, cold, light, insects, rodents, etc.
b. Protection against "human" hazards—principally counterfeiting, tampering and pilferage.
c. Protection against transport hazards such as shock, breakage, leakage, sifting, dust, grease, scuffing, etc.
d. Protection against the product itself—where the product might react with the package to cause damage to itself—such as loss of flavor—or to cause damage to the package by grease penetration, moisture penetration, ink bleeding or in some similar manner.

Rule No. 3 for the package planner reads, therefore, "Provide the maximum number and quality of desirable protections against probable hazards consistent with probable conditions of use and with costs."



4. Display. The package is a tool of merchandising designed to present the product to the consumer in attractive light. Oftentimes the package contains a product of amorphous nature and one which cannot be readily visualized or seen. Here the entire impression regarding the product is one which must be conveyed by the package. In other instances, the package must disclose the product—through windows, glass walls, transparent cellulose walls or by other means—in the most favorable possible setting. Thus, whether the package be opaque or transparent, it has a major function—the favorable presentation of the product.

Display is not, however, limited to presentation. It involves, also, explanation of the product. The package must tell the name of the product—presenting this, by trade mark, color, lettering or other means—in a way that may be recognized by the consumer and may thus encourage repeat sales. The package must explain the use of the product. Sometimes a word will suffice, sometimes accurate and carefully compiled directions must be imprinted or labeled onto the container. Sometimes such explanations must be incorporated in the form of an attached or accompanying folder or booklet.

The package may further provide other data relating to the product. It may visualize, through pictures, the appearance of the product when prepared for ultimate use, as in the case of semi-prepared or raw foods. It may provide cross-advertising to other items manufactured by the same concern, or may suggest additional ways in which the product may be used.

Finally, the package must be visible and attractive under its probable conditions of exposure to the consumer. Too many packages are designed from a "three-foot viewpoint" and judged as seen at arm's length on the drawing board, although they will almost invariably be first viewed by the consumer at anywhere from ten to thirty feet of distance.

An additional and increasingly important display factor hinges around the appearance of the package in advertising. Since recognition of the package is important if advertising is to be capitalized upon, the provision of certain visual elements which the consumer may correlate with the impressions created by advertising becomes an important element in package design. Even radio advertising—where no direct vision is involved—can be made to tie in to advantage with a properly designed package. Thus the announcer may tell the consumer to look for "the big blue box," whereas he may have difficulty in phrasing an easily recognized and easily remembered description of a very complicated and multi-colored container having no central recognition point in its design.

While still a bit over the horizon, the possibilities of television have interested some more far-sighted packagers who have conducted investigations into the probable effect of this medium on package design and particularly—because of distortion and color limitations in television—upon package coloring.



5. Utility. Convenience in use and in handling can win valuable dealer and consumer good-will for packages and their sponsors. The designer will do well to make certain that his package is of a type acceptable to the dealer and his clerks. The package must be stable, must resist various forms of manhandling, must be easily lifted and carried, must stack easily and, in other ways, make for a minimum of effort on the part of the dealer in maintaining his stock.

When lines consist of numerous items, provision must be made for ready identification, by the dealer, of every item in the line. When products are of types infrequently sold and therefore relegated to high-level or low-level shelves, the package must be designed to resist deterioration due to dust and to permit easy identification from either position. Packages more frequently sold and, hence, moving through a store in a constant stream, may often gain dealer convenience features if they are dated or otherwise identified as to freshness. Numerous other

factors peculiar to every individual product will occur for consideration when design is undertaken.

The convenience of the consumer is of perhaps even greater importance. Here accessibility of the product is a major factor. The consumer tends to forget the value to him of the protection afforded by a secure closure, if this closure cannot be easily opened.

Packages for products which are consumed over an extended period of time must provide not merely ease of opening, but convenient and safe closure as well. Products which are carried in the purse or pocket must be free from sharp edges, secure against spilling and packed in odor-proof, leak-proof containers. Once again the list of desirable utilities will vary with every product packaged, but all of these are well worth studying for each contributes towards inducing repurchase.

Frequently repurchase of a particular type or brand of product may be insured by the use of a "premium utility" in the form of a dispenser, holder or other device designed for use in conjunction with the product and sold or given away at the time when the consumer first utilizes the product.

Often utility values may be gained with only slight additional cost or with none at all. An instance of this is found in the food packaging field, where housewives have been known to purchase products repeatedly because of the inclusion upon the package of recipes, changed from time to time, to re-awaken housewives' interest in them.

Breakfast foods and other products consumed by children achieve utility through the use of otherwise waste portions of the package as games of interest to the children, i.e., as cut-outs, maps, pictures, etc.



6. Re-use. Certain classes of products can profitably utilize re-use containers. These are usually fairly expensive—though not necessarily always so—and serve, in addition to their function as a package—as an actual product in themselves. There are two types of re-use containers—those used in conjunction with the product itself and those sold with one product and designed for use with another.

The first class of re-use container will be seen to include such items as the razor box of molded plastics, the gift cigarette box of wood, the glass or chromium cake tray, etc. Frequently a utility container of this sort provides the only sensible means of packaging products consisting of a number of units—witness the metal, plastic or wood box used for draftsmen's tools.

Re-use containers of the second or "premium" type may be widely varied in nature. The decorated glass tumbler used for cheese, peanut butter, etc., is an outstanding instance of this sort. Through its use, at only the slightest additional cost, manufacturers are able to induce voluntary repurchase on the part of consumers who desire to secure a complete set of such tumblers. Numerous other types of premium re-use containers will come to mind. Particularly in conjunction with Christmas merchandise—men's belts and suspenders, women's stockings, candy, etc.—such containers have achieved a wide vogue as a means of identifying a product as a gift and as a means of providing a lasting quality to a gift which would otherwise be consumed in short order.

Package Selection Factors

The foregoing paragraphs have listed a long series of package functions. These, obviously, do not all apply to any given package in equal degree. The packager and the designer in planning a package must consider each possible means of meeting or satisfying a package function and evaluate it by a number of factors.

Cost vs. function. The amount which a consumer may reasonably be expected to pay for a package varies in different industries and with different products. It varies, likewise—even in the case of identical products—with the market towards which the product is directed. Yet, in every instance, there is some fixed range of limitation beyond which—and often below which—package costs must not go. Often this range is determined by competitive considerations. More frequently it is a plain matter of common sense. Yet every proposed package feature designed to satisfy a package function must be judged and selected or rejected only after the most careful consideration of costs.

Production convenience. All too often designers have been prone to ignore this element in planning packages. Since most package designs nowadays represent redesigns of earlier packages, they usually involve the re-use, in part or in whole, of existing plant facilities and of existing dies, jigs, molds, etc. Even where new package producing or package filling and sealing equipment is to be installed, the package must be planned to meet the requirements of the machine. Each type of container and type of machine imposes its own restrictions upon the shape, size and materials of a package and the wise designer will closely correlate any planning of a package with the limitations broadly sketched here and with those applied to the particular production facilities applicable to the proposed package.

Handling convenience. An additional factor involving the selection or rejection of elements of a package design will be found in the element of handling convenience. In respect to package handling in the plant, this will involve such considerations as fragility, ease of filling (through wide or narrow neck bottles, etc.), ease of packing, speed of handling by hand and machine operatives and similar considerations. In respect to dealers and consumers, similar questions will arise. To take a single instance, an otherwise suitable dispensing closure was found, on examination, to so change the shape of a cylindrical package as to require roughly 60 per cent additional space in shipment and on

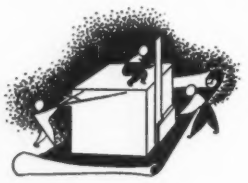
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display. The designer was therefore forced to consider whether the utility of the dispensing unit justified the extra expense involved in the increase in size.

Competitive and habitual factors. While a new package usually represents a breaking away from tradition, it is often a wise caution on the part of the designer to consider trade customs and consumer habits. If all competitives of a given product are packaged in pints and quarts, this may provide sufficient reason for determining in advance that the new package must likewise measure one pint or one quart. It may, on the contrary, justify the provision of a new package which will measure one-half pint or one gallon.

The traditional package for furniture polish—to select a single instance—has been a tall, thin glass container, with a comparatively narrow neck, providing little stability but great ease of hand gripping and economy of application of the product to a polishing cloth. A designer planning a new furniture polish package must determine whether a squat container which will provide greater stability will be desirable or whether the gain in stability will not be more than counterbalanced by a loss in convenience in handling and in apparent size.

In certain fields, trade customs operate to rigidly restrict the package designer's freedom of action. Some items are traditionally packed in dozens, some in tens, some in twenties and only a rash designer will arbitrarily step out beyond such traditional limitations without adequately surveying the field and determining whether such off-size and off-quantity containers will be acceptable to dealers and to ultimate consumers. An otherwise completely acceptable package will sometimes meet with pronounced consumer resistance simply because it differs in color, texture, shape or material from those traditionally used in a given field. Sometimes the provision of conveniences and protections of great value to the consumer will actually serve to inhibit purchases because such conveniences are achieved by means which run counter to habits or tastes in the field. An instance of this sort is found in the sealed envelope gradually coming into use for hosiery—a type of package which has had to win an uphill fight against the traditional habit of sales clerks and hosiery purchasers to examine each pair by running the hand into each stocking.



Design Procedure

Package design procedure naturally varies from company to company and from problem to problem. For most companies package design represents an occasional rather than a continuous event. For this reason, most companies seek outside aid and advice. The average executive does not consider himself either a technician or an artist and hence finds it wise to consult with those who can provide either or both forms of advice.

Two types of package designing service are available. The packager may consult an independent designer—an individual or organization—whose principal activity is to plan packages and, consequently, may be relied upon to have an excellent background of information and experience relative to the elements of package planning detailed in the foregoing paragraph. The services of such designers, being a professional service, is usually available on a retainer or on a by-the-job fee basis. Occasionally such services are available on a royalty basis, although in most instances neither the packager or the package designer will find this last method an equitable means of payment.

The packager may, on the other hand, seek the aid and advice of the designing division maintained by many of the package-supplying organizations. The size of such departments and their ability to aid the packager, naturally varies from company to company, but it may safely be said—in respect to most of the larger package suppliers in each division of the package manufacturing industry—that such organizations are unusually well equipped to provide technical advice and are often equally well equipped to provide artistic services.

In many cases, packagers find it convenient to utilize both the independent and the company-maintained designer. The independent designer is in a position to achieve a very close working relationship with the company which hires him and thus to study the specific problems of that organization, particularly in respect to merchandising factors, intensively. He can, however, very easily lean upon the technical knowledge possessed by the designing and engineering divisions of the package-supplying firms who are, by their very nature, best able to analyze the practicability of a package from a production standpoint.

When either or both types of designers are utilized, it is well for the packager to lean upon a third group of advisers as well—his own production staff and the engineering departments of the package machinery manufacturers. Any checking or censoring of package plans which these people may be permitted to make in advance will oftentimes provide a continuous saving in production costs when the package is finally adopted.

The selection of a designer being the first step, adequate research is obviously a second essential in any package design operation. The designer must be provided with all necessary data as to the nature of the product, the manner in which it is sold, the channels through which it is sold, consumer and dealer habits, trade customs, etc.

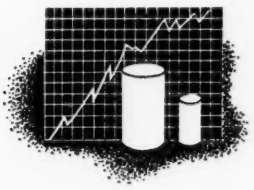
Frequently it will be found necessary to conduct field researches to determine accurately many of these factors. It is surprising, in fact, how many of these facts are unknown to companies which have long been operating in particular fields.

Armed with the necessary data as to brand, product and market, the selected designer will be in a position to proceed with planning the package. Experienced packa-

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gers frequently take great pains to make certain that any proposed designs are subjected to the criticism of all departments which will later be called upon to produce, distribute or merchandise the product. Sometimes this work is generalized through a "packaging committee." The tendency of such committees, however, to resort to one-sided and perhaps arbitrarily negative criticisms should be cautioned against, since such criticisms often reflect no weakness in the proposed package but, rather, an element of inertia and unwillingness to change on the part of the department making the criticism.

Frequently proposed packages are reproduced in small quantities and submitted to jobbers, wholesalers and retailers and even to selected ultimate consumers, to secure the reactions of these parties. Here, once again, the utmost caution is indicated. While careful research will provide much valuable information, careless efforts or researches not properly worded will serve merely to distort the picture and to mislead the designer and the sponsor of the package under consideration.



Design Testing

It is not always possible, of course, to test a new package prior to adaptation. Frequently decisions must be made and substantial charges incurred prior to the creation of a package. This is particularly true where expensive engravings, dies, jigs or molds must be purchased before even a single package may be created. Certain factors, however, such as color schemes, may on occasion be tested by adequately trained research authorities with a minimum of expense. To the extent that such tests permit the selection of the package best able to secure substantial sales and permit such selection prior to the undertaking of substantial commitments for dies, molds, stocks of packages, etc., they are, of course, extremely valuable.

However, the importance of package testing in the form of tests for consumer reactions, has probably been over-emphasized in the past. The science of testing the consumer is not exact and the cost of conducting tests over an adequate sample of the market sometimes proves greater, than the cost of actually producing the packages required to place the product on the market.

Another form of test and one more usually followed by most companies involves the distribution of the new package in a limited territory. Its acceptance by the consumer in this territory will be taken to justify extension, step by step, to other regions. Its failure of acceptance—if such occurs—will serve to provide reasons for either entirely rejecting the new package or for modifying its form.

Tests of packages by either of the means discussed above must be recognized as falling somewhat short of 100 per cent accuracy—in most instances—because other factors tend to muddy the waters. Sales increases attained with the introduction of a new package may sometimes be due in part to increased interest on the part of salesmen, jobbers, dealers or consumers—a form of novelty interest which will later wear off and disappear. Contrariwise, a relative sales increase may be disguised and appear as an absolute decrease because of a change in business conditions or some other factor which, simultaneously with the introduction of a new package, tends to restrict the market for all products of this sort.



Initiating the Package Change

Since most package designs are today redesigns, the packager is confronted with a major problem, when a decision is made to replace an old package with a new one.

Between the design and production of a new or replanned package and its introduction to the consumer lie a series of merchandising problems which, while applying with differing emphasis to different situations, nonetheless appear to greater or less degree in every instance of such package change. These may be summed up as:

(1) The problem of physical distribution—of getting the new package into the store.
(2) The problem of minimizing or eliminating losses in disposing of old stocks and the kindred problem of speeding up the disposal of such stocks.
(3) The problem of retaining all possible news value pertaining to the change and of capitalizing upon the change both with the jobbers, dealers and sales clerks, and with the consuming public.

Within the compass of the first problem, arises the question of method to be followed in introducing the new merchandise. Should it be introduced simultaneously in all localities? Should the design change be made in several stages or should it be achieved in one jump? Should the change be made when dealer stocks are low or when they are high?

The method of greatest factory convenience would naturally call for making the change by the simple expedient of shipping out all of the old packages in process and in stock and then starting to ship the new merchandise as ordered. However, this method would result in tremendous confusion on the part of both jobbers and dealers, in the creation of "shelf orphans" in the person of old packages lying on shelves while the new were being sold. Such unequal dates of introduction through-

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out the territory served would create dealer ill-will (among dealers having stocks of the old package) and result in complete loss of all the news and advertising values of the new package.

Hence, good practice has always called for an attempt to *achieve simultaneous introduction over a large territory if not over the entire national market.*

Equalization Method

To achieve this, several methods are available. In the introduction of its Grape-Nuts package some time ago, the General Foods Corporation adopted the "equalization" method—shifting stocks among jobbers so that each would have an absolute minimum of old merchandise on hand at the time for introduction of the new package. Such "equalization" has also been practiced among dealers; is, in fact, practiced daily in the case of perishable products such as bread, but its most practical application when a package change is involved is among jobbers. It is best used when the product under consideration is light in weight, thus minimizing freight and packing charges; when jobbers are close together, reducing the length and cost of the haul; and when the demand for the product is fairly steady. In this way an approximate date for the exhaustion of all stocks can be set in advance.

Stock Control

A second—and more usual—method calls for stock control initiated by the manufacturer's sales force. Here the salesman, being aware of the dealer's usual sales volume, is called upon to hold his orders down to the point where all stocks of the old package will tend to become exhausted at precisely the moment when the new package is to be introduced.

While this method is the one most easily practiced, it suffers from a number of drawbacks. First of all, it converts the salesman into a "non-salesman"—forces him to cut down orders rather than to encourage their increase in size. Secondly, it involves the danger of stock exhaustion in some stores prior to the date of introducing the new package. The loss of sales may here be negligible, but the loss of good-will on the part of the dealers who lose the sales (because of the over-ruling of what they will maintain was their better judgment) is often too great to be risked.

In spite of its practical and psychological disadvantages, this method is popular because it minimizes the amount of stock left after the new package has been introduced. It throws the major burden of effecting the change upon the dealer's shoulders instead of on those of the manufacturer.

Exchanging Merchandise

Another means of effecting a package changeover calls for the exchange of old merchandise for new at a given date. This is very seldom followed because it would involve a tremendous loss in freight, damaged goods, repackaging, overhead and other charges. In fact, confronted with the alternative of repackaging already-packaged merchandise and throwing it away, the average manufacturer will find the latter less expensive.

However, the guarantee to purchase left-over stock may be combined with the stock-control method to achieve a solution better than either method would afford if used separately.

It will be seen that all these methods, with their varying advantages and disadvantages, involve a certain amount of friction and extra work on the part of both manufacturer and dealers. This can, of course, be minimized, by careful planning. However, because of this friction and extra work, the balance is all in favor of reducing package changes to a single operation.



When to Make the Change

The question of making the announcement of the package change will naturally arise whenever such a change is considered. Such an announcement must break down into two parts—that going to dealers and that intended for the general public.

In the case of dealer announcements, best practice calls for six to eight weeks' notice of a change. This permits of the dealer's making plans for disposal of old merchandise, for stock control, and for rationed purchases. Any longer period will tend to take away a great deal of the dealer enthusiasm when the new package finally makes its appearance.

The question of regional or national changeover has its proponents on both sides of the fence. Those in favor of a regional change point out the possibility of moving merchandise gradually from east to west, or north to south, in "equalizing" stocks. Those in favor of the national changeover, point out the overlapping, the loss of news value in this day of wide travel, the long time necessary, and the need for maintaining a factory line for both old and new packages. The odds seem to be in favor of a national change for all nationally advertised products, except those which have a moving season, such as sunburn lotions which sell earlier in the south than in the north.

It may seem, from the foregoing, that the introduction of a new package involves so many hazards as to make its consideration something to be long delayed. Yet such is not the case. Difficulties have here been pointed out because they must be appreciated to be overcome. But the manufacturer who hesitates because the difficulties exist, has merely to look to the number of others in his field, who have easily overcome these difficulties, to understand that advance planning can reduce them to negligible disadvantages which cannot possibly counterbalance the advantages to be gained when a package change is called for by sales conditions.

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Selection and Use of Color

by GEORGE WELP*

Color is a sensation which requires no conscious struggle of the intellect to appreciate. It does more than stir up objective stimulations.

Because colors achieve naturalness unattainable with plain black and white, colors are important as a selling tool. A picture of coffee has much more sales appeal when printed in its natural rich brown, than when reproduced in cold, unreal grays and whites. Color adds life! It imparts a reality and an animation that not only attracts attention but increases the appeal.

Color classification and measurement, until very recently, has been a rather indefinite business. But there is one exact yardstick which is of use, and that is seeing what color can do for your sales.

Merchandising men are no fools. They are quick to drop non-profitable packaging techniques. So there is no surer proof that color does sell package merchandise than the tremendous increase in the use of color.

During the past few years package re-styling which had at one time occurred only once in the lifetime of a company now often happens as frequently as every year.

The effective use of color in packaging is unquestionably worth all it costs when it is right. But it must be right. The designing of color for packages involves a fundamental knowledge of color, familiarity with color relationship principles, an understanding of the mechanical limitations of presses, papers, and inks. The principle of color relationship is the subject closest to the heart of the man about to redesign his package. The selection of colors to suit a given design is important.

However, the packager should keep definitely in mind that the accurate definition of design is *intent* or *purpose*. Obviously, therefore, color relationships to suit every purpose cannot be reduced to a set of hard and fast rules. To satisfy the standards of good taste, the talents of a reputable designer must be employed, but beyond the standards of good taste, the demands of good merchandising must always take precedence. This is not to advocate atrocious design or bad taste in either design or color, but it most definitely discourages the use of good taste in either design or color merely for the sake of satisfying some individual's esthetic opinions.

When everything on color relationships is said and done, the test which a good color scheme must ultimately meet is the degree to which it increases demand for the product it embellishes. It will do no good to explain that the package is a perfect example of complementary contrast if declining sales are in uncomplementary contrast to last year's figures.

Various systems for notation and color relationships have been put forward. Each has its defenders and disciples. Out of these can be culled a few dependable ones which are subject to the least controversy and which can be employed by the novice with only a limited knowledge of color. The first color need of the package designer is a description of a single color.

No matter what system of color description is used, it must acknowledge the fact that all color possesses three characteristics. Therefore, to describe color completely as it is seen by the eye, it is necessary to use three dimensions. Just as in measuring a box we give its length, width, and depth, so too in measuring color, we include three dimensions. *Hue*, *Value*, and *Chroma* are terms most often used to describe color as seen by the eye.

Hue is the quality by which we distinguish one color from another, as red from yellow or yellow from blue. Value is the lightness or darkness of a color as compared with a scale of grays from white to black. Chroma is the strength of a color, or the quality by which we distinguish a strong color from one that is "grayed."

To apply these three dimensions we first describe the hue of a color, as green, then designate value, or the lightness or darkness; and to complete the description, give its chroma, whether it is a rich or a grayed green.

Primary considerations in the selection of package colors are visibility and legibility. The principle to be observed here is that of sufficient contrast in value. Value differences without regard to hue or chroma may make or mar the result. Value contrast will make lettering or type, for example, legible or illegible. A color of middle value will be least distinguishable on a color of equal value, and the greater the contrast in value, the greater the legibility.

In this connection, bear in mind that simultaneous contrast affects value contrast. A neutral gray of middle value appears lighter against black and darker when contrasted with white. The same thing holds true with any given hue.

The question is frequently raised in connection with a package design, "Is it in color balance?" There is a principle known as the doctrine of chromatic equivalents which aims to establish color balance in a design. Based on the fact that white light is composed of all the spectral colors in certain proportions, this theory maintains that in order to be in perfect balance, the chromatic elements of a design should be adjusted so that if all the constituent colors were mingled on the retina, a neutral gray would be achieved. No hue would then be noticeable. This can be demonstrated by placing segments on a disk in the proper proportions and spinning them rapidly on a wheel. If they appear to the eye as a sensation of neutral gray, the design is said to be in balance.

To achieve this in design, the areas of one color to be

* The International Printing Ink Corp.

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used with another or the areas of many colors in combination should be determined by the power of the colors employed. For example, if we wanted to use a combination of a middle value yellow-red of fairly strong chroma with a blue of a low value and weak chroma we would use a much larger area of the blue than of the yellow-red. In all principles of color relationship areas of white, black, and gray are considered neutral and are ignored.

The general principle covering the areas of color in a given relationship may be stated thus: A color of stronger chroma and higher value should occupy the smaller area and a color of weaker chroma and lower value should occupy the greater area. This does not mean that a good design could not be built using a reverse method but it is fairly safe to follow the rule.

In selecting colors for various purposes in packaging design, three methods are suggested:

1. By following the general rules for color harmony and color contrast.

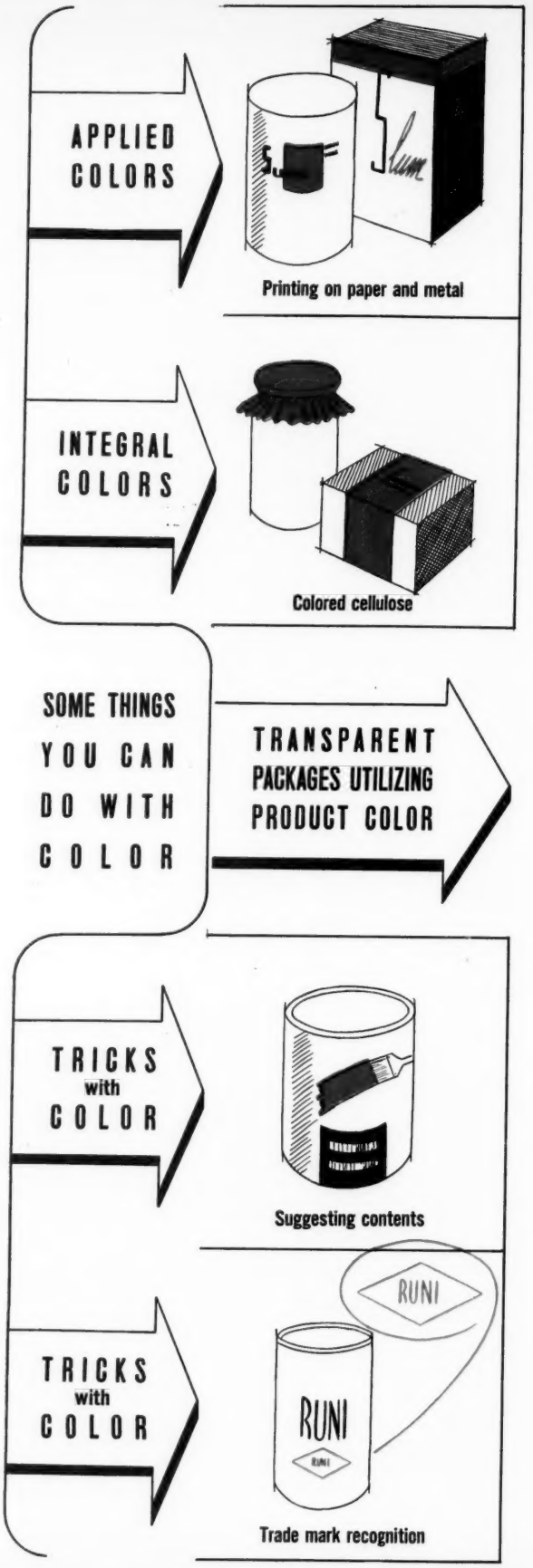
2. By choosing colors appropriate to a dominant color note which has already been specified in your design. It is frequently a condition of a color selection assignment that one color is already specified and the rest of the color scheme must be in harmony or in contrast with it.

3. By choosing original color combinations through pure experimentation. This may lead to unsatisfactory results, and it is here that it will be found valuable to check your results against the general principles described in this article and shown in the illustrations.

Remember that while genius may work in violent color combinations, those of lesser talent should not flirt with the disaster which often accompanies such experiments. Satisfactory results may be achieved if we use colors of low values and weak chroma for our larger areas and contrast the smaller areas with colors of high value and strong chroma. While this safe rule may not always produce real distinction in the use of color, it will avoid many atrocities.

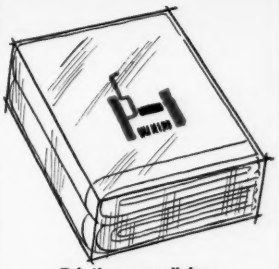
There are other considerations besides color harmony or color contrast in the selection of color for packaging. Ask yourself these questions. Is the color appropriate to the product packed? Is there resistance to certain colors in your particular field of selling? Does the color give high visibility on display? Is the name legible and the typography simple and easy to read? Is the color distinctive from competitors' packages? Does the color selected help to make your package easily remembered? Does the color help or hinder the design? Have you selected colors which are capable of conversion into inks which will withstand the chemical action of the product; impart neither color nor odor to the product; will not rub, fade, or check, and do full justice to the original design?

If the colors you have chosen successfully meet these qualifications, you have done your job well.

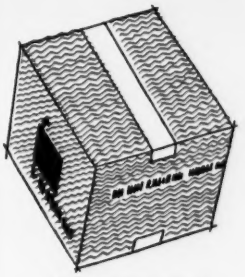




Printing on glass and plastics



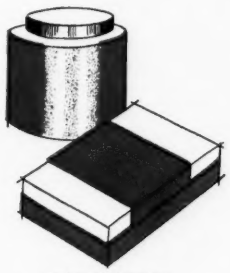
Printing on cellulose



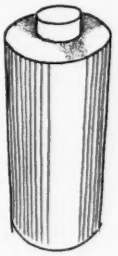
Coloring liner board



Colored box papers



Colored plastics



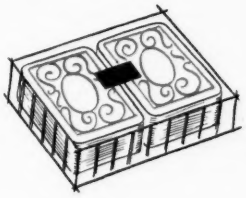
Colored glass packages



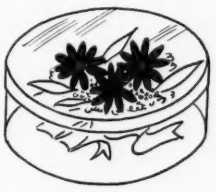
Colored fabrics



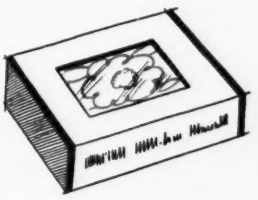
Colored ribbons and seals



Clear plastics



Clear cellulose



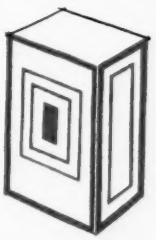
Clear windows



Clear glass



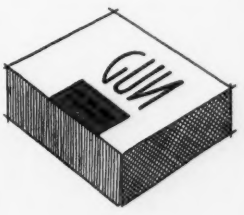
Enlarging apparent size



Reducing apparent size



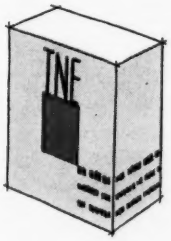
Identification



Stressing features



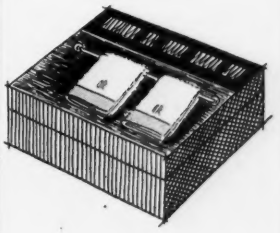
Colors to create emotions



Color to intensify product color



Suggesting a quality or ingredient



Color-photo packages

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Packagers and the Law

Legal restrictions upon the form, the content, the description and the manner of preparation of packages are not new to American history. The attention of the packager has, however, been focused upon them within the last year or two by the passage of the Federal Food, Drug and Cosmetic Act of 1938, which imposes far more detailed and severe restrictions upon much wider portions of the packaging field than was formerly the case. It should be remembered, however, that a number of other Federal statutes impose regulation and restriction upon the packager. Among these are the Butter Act, the Sea Food Inspection Act, the Meat Inspection Act, the Virus, Serum and Toxin Act and the Wrapped Meats Act, all of which have been in continuous application for a number of years in the particular limited fields which their titles indicate.

Another recent legislative enactment affecting packaging is the Wheeler-Lea Amendment to the Federal Trade Commission Act, regulating the advertising of foods, drug devices and cosmetics.

Many Statutes Affect Packager

Federal trade mark, copyright and patent laws have long applied to many aspects of packaging. So have regulations imposed by the Federal Alcohol Administration, the Post Office, the Interstate Commerce Commission and the Bureau of Internal Revenue, each applying, in a limited way, to certain particular sections of the packaging industries.

State and local regulations have tended to follow the lines of Federal regulations (in some minor but very significant divergencies) and thus the Federal Food, Drug and Cosmetic Act of 1938 has been followed by a series of State Acts now extending to 15 States of the Union and with every prospect of further extension in the near future.

The present Food, Drug and Cosmetic Act supplements and enlarges the scope of the Food and Drug Act of 1906 which, in turn, had as its forerunner the Law of 1890 which prohibited the importation into the United States of adulterated or unwholesome foods, drugs or liquors.

The Act of 1906 went beyond the limited field of importation and was designed to "prevent the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors." While the Constitution prevented Congress from prohibiting the manufacture of adulterated products within the States, the object of protecting consumers was largely achieved under the Constitutional power to regulate commerce among the several States. Using this power, Congress prohibited the introduction of adulterated or misbranded articles into interstate commerce. The Act of 1906 was amended in 1912 to prohibit false statement of curative or therapeutic affect on the labeling of drugs.

Food, Drug and Cosmetic Act

After prolonged hearings during several sessions of Congress, the present Federal Food, Drug and Cosmetic Act was finally passed on June 25, 1938. In summary, the Act makes the following provisions:

1. Forbids traffic in confectionery containing metallic trinkets and other inedible substances.
2. Specifically requires label declaration of artificial coloring, artificial flavoring and chemical preservatives in food, but exempts butter, cheese and ice cream from this requirement in so far as the use of artificial coloring is concerned.
3. Requires labeling of special dietary food to inform purchasers fully of the product's vitamin, mineral and other dietary properties.
4. Provides for the promulgation of a definite and standard of identity and a reasonable standard of quality and fill of container for each food, but exempts from this provision fresh and dried fruits and vegetables, except avocados, cantaloupes, citrus fruits and melons. Butter is also exempt from this provision, but the act preserves the statutory definition and standard of identity for butter which became law in 1923. (The old law contains no authority for the establishment of definitions and standards of identity, and the authority to establish standards of quality and fill is limited to canned foods.)
5. Requires the labeling of food for which no definition and standard of identity has been fixed to disclose the ingredients by name, except spices, colorings and flavorings, which may be declared simply as spices, colorings and flavorings. Authorizes regulations prescribing exemptions from this requirement where compliance is impracticable or results in deception or unfair competition.
6. Does not contain the "distinctive name" joker of the old law under which any mixture or compound of food not injurious to health can escape control.
7. Brings under control drugs used in the diagnosis of disease and drugs intended to affect the structure or any function of the body.
8. Brings therapeutic devices under control, and subjects them to the same general requirements as are set up for drugs.
9. Prohibits traffic in drugs and devices which are dangerous to health under the conditions of use prescribed in the labeling.
10. Requires labels of official drugs—i.e., drugs recognized in the United States Pharmacopoeia, National

Formulary or Homeopathic Pharmacopoeia of the United States—to reveal any differences of strength, quality or purity from the official standards. (The old law requires merely that the label bear a true statement of the strength, quality and purity of the drug, without showing the difference from the official standard.)

11. Requires drugs intended for use by man to bear labels warning against habit formation if they contain any of a list of narcotic or hypnotic habit-forming substances, or any derivative of any such substance which possesses the same properties.

12. Requires the labeling of drugs and devices to bear adequate directions for use, but authorizes regulations exempting drugs and devices from this requirement where it is not necessary for the protection of the public health.

13. Requires the labeling of drugs and devices to bear warnings against probable misuse which may be dangerous to health.

14. Requires special precautionary labeling for drugs that are liable to deterioration.

15. Does not contain the fraud joker in the old law under which the government must prove that false claims of curative effect on the labels of patent medicines were made with willful intent to deceive.

16. Requires official drugs to be packaged and labeled as prescribed by the Pharmacopoeias and Formulary.

17. Requires the labels of non-official drugs to list the names of the active ingredients, and in addition to show the quantity or proportion of certain specified substances. Authorizes regulations prescribing exemptions from this requirement where compliance is impracticable.

18. Proscribes the use of containers for food, drugs and cosmetics which may render the contents injurious to health.

19. Prohibits traffic in food, drugs and cosmetics which have been prepared or handled under insanitary conditions that may contaminate them with filth or that may render them injurious to health.

20. Proscribes slack filling of containers for foods, drugs and cosmetics and prohibits the use of deceptive containers.

21. Authorizes factory inspection of establishments producing food, drugs, devices and cosmetics for interstate shipment.

It will be noted from the foregoing summary that the Act is implemented with far more stringent penalties for violation than formerly existed, that the Act extends Federal regulation into new fields (notably cosmetics) and that court procedure and regulatory procedure differ substantially from those previously existing.

Since the enactment of the new Act, manufacturers have had some time to become acquainted with its provisions and with the manner in which it is being administered. While few cases have yet reached the courts for final decision, the general outline of administrative procedure has become clear and numerous regulations have been issued by the administration further defining and describing the provisions of the Act as they apply to packagers. Most far reaching among these are the en-

OFFICIALS ADMINISTERING THE FEDERAL FOOD, DRUG AND COSMETIC ACT

Secretary of Agriculture: Henry A. Wallace

Food, Drug and Cosmetic Administration:

Chief: W. G. Campbell

Assistant Chief: P. B. Dunbar

Assistant to the Chief: F. B. Linton

Chief Educational Officer: Ruth de F. Lamb

Interstate Division: C. W. Crawford

Import Division: A. E. Taylor

Division of State Cooperation: W. S. Frisbie

Drug Division: T. G. Klumpp

Food Division: W. B. White

Insecticide Division: C. C. McDonnell

Microanalytical Division: B. J. Howard

Naval Stores Division: Vacancy

Division of Pharmacology: H. O. Calvery

Vitamin Division: E. M. Nelson

Color Certification Section: H. T. Herrick

Cosmetics Division: R. S. Pruitt

Food Standards Committee:

Representatives from the Association of Official Agricultural Chemists: C. D. Howard, Director and Chief, Division of Chemistry and Sanitation, State Board of Health, Concord, N. H.; Guy G. Frary, State Chemist, Vermillion, S. Dak.

Representatives from the Association of Dairy, Food and Drug Officials of the United States: J. J. Taylor, State Chemist, Dept. of Agriculture, Tallahassee, Fla.; Mrs. F. C. Dugan, Director, Bureau of Foods, Drugs and Hotels, State Board of Health, Louisville, Ky.

Representatives from the Food and Drug Administration: W. B. White, Chief, Food Division; W. S. Frisbie, Chief, Division of State Cooperation.

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forcement regulations promulgated on December 22, 1939, portions of which are here reprinted. (The caption of each of the following regulations designates the section of the Act under which the regulation is issued.)

SECTION 201 (M)

Labeling includes all written, printed or graphic matter accompanying an article at any time while such article is in interstate commerce or held for sale after shipment or delivery in interstate commerce.

SECTION 201 (N)

The existence of a difference of opinion, among experts qualified by scientific training and experience, as to the truth of a representation made or suggested in the labeling is a fact (among other facts) the failure to reveal which may render the labeling misleading, if there is a material weight of opinion contrary to such representation.

SECTION 403 (A)

(a) Among representations in the labeling of a food which render such food misbranded is a false or misleading representation with respect to another food or a drug, device, or cosmetic.

(b) The labeling of a food which contains two or more ingredients may be misleading by reason (among other reasons) of the designation of such food in such labeling by a name which includes or suggests the name of one or more but not all such ingredients, even though the names of all such ingredients are stated elsewhere in the labeling.

(Identical provisions apply to drugs [Section 502A] and cosmetics [Section 602A]. *Editor.*)

SECTION 403 (E)

(a) If a food is not manufactured by the person whose name appears on the label, the name shall be qualified by a phrase which reveals the connection such person has with such food, such as "Manufactured for and Packed by ———," "Distributed by ———," or other similar phrase which expresses the facts.

(b) The statement of the place of business shall include the street address, if any, of such place, unless such street address is shown in a current city directory or telephone directory.

(c) If a person manufactures, packs, or distributes a food at a place other than his principal place of business, the label may state the principal place of business in lieu of the actual place where each package of such food was manufactured or packed or is to be distributed, if such statement is not misleading in any particular.

(e) (1) The statement of the quantity of the contents shall reveal the quantity of food in the package, exclusive of wrappers and other material packed with such food.

(2) The statement shall be expressed in the terms of weight, measure, numerical count, or a combination of numerical count and weight or measure, which are generally used by consumers to express quantity of such food and which give accurate information as to the quantity thereof. But if no general consumer usage in expressing accurate information as to the quantity of such food exists, the statement shall be in terms of liquid measure if the food is liquid, or in terms of weight if the food is solid, semi-solid, viscous, or a mixture of solid and liquid; except that such statement may be in terms of dry measure if the food is a fresh fruit, fresh vegetable, or other dry commodity.

(f) (1) A statement of weight shall be in terms of the avoirdupois pound and ounce. A statement of liquid measure shall be in terms of the United States gallon of 231 cubic inches and quart, pint, and fluid ounce subdivisions thereof, and, except in case of frozen food which is so consumed, shall express the volume at 68° Fahrenheit (20° Centigrade). A statement of dry measure shall be in terms of the United States bushel of 2150.42 cubic inches and peck, dry quart, and dry pint subdivisions thereof; or in terms of the United States standard barrel and its subdivisions of third, half, and three-quarters barrel. However, in the case of an export shipment, the statement may be in terms of a system of weight or measure in common use in the country to which such shipment is exported.

(2) A statement of weight or measure in the terms specified in subdivision (1) of this paragraph may be supplemented by a statement in terms of the metric system of weight or measure.

(3) Unless an unqualified statement of numerical count gives accurate information as to the quantity of food in the package, it shall be supplemented by such statement of weight, measure, or size of the individual units of the food as will give such information.

(h) (1) If the quantity of food in the package equals or exceeds the smallest unit of weight or measure which is specified in paragraph (f) of this regulation, and which is applicable to such food under the provisions of paragraph (e) (2) of this regulation, the statement shall express the number of the largest of such units contained in the package (for example, the statement on the label of a package which contains one quart of food shall be "1 quart," and not "2 pints" or "32 fluid ounces"), unless the statement is made in accordance with the provisions of subdivision (2) of this paragraph. Where such number is a whole number and a fraction, there may be substituted for the fraction its equivalent in small units, if any smaller is specified in such paragraph (f) (for examples, 1¾ quarts may be expressed as "1 quart 1¾ pints" or "1 quart 1 pint 8 fluid ounces;" 1¼ pounds may be expressed as "1 pound 4 ounces"). The stated number of any unit which is smaller than the largest unit (specified in such paragraph (f)) contained in the package shall not equal or exceed the number of such smaller units in the next larger unit so specified (for examples, instead of "1 quart 15 fluid ounces" the statement shall be "1½ quarts" or "1 quart 1 pint;" instead of "24 ounces" the statement shall be "1½ pounds" or "1 pound 8 ounces").

(2) In the case of a food with respect to which there exists an established custom of stating the quantity of the contents as a fraction of a unit, which unit is larger than the quantity contained in the package, or as units smaller than the largest unit contained therein, the statement may be made in accordance with such custom if it is informative to consumers.

(i) The statement shall express the minimum quantity, or the average quantity, of the contents of the packages. If the statement is not so qualified as to show definitely that the quantity expressed is the minimum quantity, the statement shall be considered to express the average quantity.

(j) Where the statement expresses the minimum quantity, no variation below the stated minimum shall be permitted except variations below the stated weight or measure caused by ordinary and customary exposure, after the food is introduced into interstate commerce, to conditions which normally occur in good distribution practice and which unavoidably result in decreased weight or measure. Variations above the stated minimum shall not be unreasonably large.

(k) Where the statement does not express the minimum quantity—

(1) variations from the stated weight or measure shall be permitted when caused by ordinary and customary exposure, after the food is introduced into interstate commerce, to conditions which normally occur in good distribution practice and which unavoidably result in change of weight or measure;

(2) variations from the stated weight, measure or numerical count shall be permitted when caused by unavoidable deviations in weighing, measuring, or counting individual packages which occur in good packing practice.

But under subdivision (2) of this paragraph variations shall not be permitted to such extent that the average of the quantities in the packages comprising a shipment or other delivery of the food is below the quantity stated, and no unreasonable shortage in any package shall be permitted, even though overages in other packages in the same shipment or delivery compensate for such shortage.

(l) The extent of variations from the stated quantity of the contents permissible under paragraphs (j) and (k) of this regulation in the case of each shipment or other delivery shall be determined by the facts in such case.

(m) A food shall be exempt from compliance with the requirements of clause (2) of section 403 (e) of the Act if—

(1) the quantity of the contents, as expressed in terms applicable to such food under the provisions of paragraph (e) (2) of this regulation, is less than one-half ounce avoirdupois, or less than one-half fluid ounce, or (in case the units of the food can be easily counted without opening the package) less than six units; or

(2) the statement of the quantity of the contents of the package, together with all other words, statements, and information required by or under authority of the Act to appear on the label cannot, because of insufficient label space, be so placed on the label as to comply with the requirements of section 403 (f) of the Act and regulations promulgated thereunder.

(Similar provisions apply to drugs [Section 502B] except for permission to use metric weights and measures and to cosmetics [Section 602B]. *Editor.*)

SECTION 403 (F)

(a) A word, statement, or other information required by or under authority of the Act to appear on the label may lack that prominence and conspicuousness required by section 403 (f) of the Act by reason (among other reasons) of—

(1) the failure of such word, statement, or information to appear on the part or panel of the label which is presented or displayed under customary conditions of purchase;

(2) the failure of such word, statement, or information to appear on two or more parts or panels of the label, each of which has sufficient space therefor, and each of which is so designed as to render it likely to be, under customary conditions of purchase, the part or panel displayed;

(3) the failure of the label to extend over the area of the container or package available for such extension, so as to provide sufficient label space for the prominent placing of such word, statement, or information;

(4) insufficiency of label space (for the prominent placing of such word, statement, or information) resulting from the use of label space for any word, statement, design, or device which is not required by or under authority of the Act to appear on the label;

(5) insufficiency of label space (for the prominent placing of such word, statement, or information) resulting from the use of label space to give materially greater conspicuousness to any other word, statement, or information, or to any design or device; or

(6) smallness or style of type in which such word, statement, or information appears, insufficient background contrast, obscuring designs or vignettes, or crowding with other written, printed, or graphic matter.

(b) No exemption depending on insufficiency of label space, as prescribed in regulations promulgated under section 403 (e) or (i) of the Act, shall apply if such insufficiency is caused by—

(1) the use of label space for any word, statement, design, or device which is not required by or under authority of the Act to appear on the label;

(2) the use of label space to give greater conspicuousness to any word, statement, or other information than is required by section 403 (f) of the Act; or

(3) the use of label space for any representation in a foreign language.

(c) (1) All words, statements, and other information required by or under authority of the Act to appear on the label or labeling shall appear thereon in the English language.

(2) If the label contains any representatoni in a foreign language, all words, statements, and other information required by or under authority of the Act to appear on the label shall appear thereon in the foreign language.

(3) If the labeling contains any representation in a foreign language, all words, statements, and other information required by or under authority of the Act to appear on the label or labeling shall appear on the labeling in the foreign language.

(Identical provisions apply to drugs [Section 502C] and cosmetics [Section 602C]. *Editor.*)

SECTION 403 (I)

(a) The name of an ingredient (except a spice, flavoring, or coloring which is an ingredient of a food other than one sold as a spice, flavoring, or coloring), required by section 403 (i) (2) of the Act to be borne on the label of a food, shall be a specific name and not a collective name. But if an ingredient (which itself contains two or more ingredients) conforms to a definition and standard of identity prescribed by regulations under section 401 of the Act, such ingredient may be designated on the label of such food by the name specified in the definition and standard, supplemented in case such regulations require the naming of optional ingredients present in such ingredient, by a statement showing the optional ingredients which are present in such ingredient.

(b) No ingredient shall be designated on the label as a spice, flavoring, or coloring unless it is a spice, flavoring, or coloring, as the case may be, within the meaning of such term as commonly understood by consumers. The term "coloring" shall not include any bleaching substance.

(c) An ingredient which is both a spice and a coloring, or both a flavoring and a coloring, shall be designated as spice and coloring, or flavoring and coloring, as the case may be, unless such ingredient is designated by its specific name.

(d) A label may be misleading by reason (among other reasons) of—

(1) the order in which the names of ingredients appear thereon, or the relative prominence otherwise given such names; or

(2) its failure to reveal the proportion of, or other fact with respect to, an ingredient, when such proportion or other fact is material in the light of the representation that such ingredient was used in fabricating the food.

(e) (1) A food shall be exempt from the requirements of clause (2) of section 403 (i) of the Act if all words, statements, and other information required by or under authority of the Act to appear on the label of such food, cannot, because of insufficient label space, be so placed on the label as to comply with the requirements of section 403 (f) of the Act and regulations promulgated thereunder. But such exemption shall be on the condition that, if the omission from the label of the statement of the quantity of the contents affords sufficient space to state legibly thereon all the information required by such clause (2), such statement of the quantity of the contents shall be omitted as authorized by regulation (m) (2) under section 403 (e) of the Act, and the information required by such clause (2) shall be so stated as prominently as practicable even though the statement is not of such conspicuousness as to render it likely to be read by the ordinary individual under customary conditions of purchase.

(2) In the case of an assortment of different items of food, when variations in the items which make up different packages packed from such assortment normally occur in good packing practice, and when such variations result in variations in the ingredients in different packages, such food shall be exempt from compliance with the requirements of clause (2) of section 403 (i) of the Act with respect to any ingredient which is not common to all packages. But such exemption shall be on the condition that the label shall bear, in conjunction with the names of such ingredients1 are common to all packages, a statement in terms which are as informative as practicable and which are not misleading, indicating that other ingredients may be present.

(Somewhat similar provisions apply to drugs [Section 502E]. *Editor.*)

SECTION 403 (K)

(b) A food which is subject to the requirements of section 403 (k) of the Act shall bear labeling, even though such food is not in package form.

(c) A statement of artificial flavoring, artificial coloring, or chemical preservative shall be placed on the food, or on its container or wrapper, or on any two or all of these, as may be necessary to render such statement likely to be read by the ordinary individual under customary conditions of purchase and use of such food.

(d) A food shall be exempt from compliance with the requirements of section 403 (k) of the Act if it is not in package form and the units thereof are so small that a statement of artificial flavoring, artificial coloring, or chemical preservative, as the case may be, cannot be placed on such units with such conspicuousness as to render it likely to be read by the ordinary individual under customary conditions of purchase and use.

SECTION 405

(a) (1) An open container is a container of rigid or semi-rigid construction, which is not closed by lid, wrapper, or otherwise.

(2) An open container of a fresh fruit or fresh vegetable, the quantity of contents of which is not more than one dry quart, shall be exempt from the labeling requirements of paragraphs (e), (g) (2) (with respect to the name of the food specified in the definition and standard), and (i) (1) of section 403 of the Act; but such exemption shall be on the condition that if two or more such containers are enclosed in a crate or other shipping package, such crate or package shall bear labeling showing the number of such containers enclosed therein and the quantity of the contents of each.

(b) Except as provided by paragraphs (c) and (d) of this regulation, a shipment or other delivery of a food which is, in accordance with the practice of the trade, to be processed, labeled, or repacked in substantial quantity at an establishment other than that where originally processed or packed, shall be exempt, during the time of introduction into and movement in interstate commerce and the time of holding in such establishment, from compliance with the labeling requirements of section 403 (c), (e), (g), (h), (i), (j) and (k) of the Act if—

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OFFICIALS ADMINISTERING STATE REGULATORY LEGISLATION

Alabama.—Supervisor, Division of Agricultural Chemistry, Department of Agriculture and Industries, Montgomery.

Arizona.—Director, State Laboratory, Tucson. State Dairy Commissioner, Phoenix.

Arkansas.—State Health Commissioner, Little Rock. Inspector, State Board of Pharmacy, Little Rock.

California.—Chief, Bureau of Food & Drug Inspection, State Department of Public Health, San Francisco. Chief, Dairy Control, Department of Agriculture, Sacramento.

Colorado.—Secretary, State Board of Health, Denver. State Dairy Commissioner, Denver.

Connecticut.—State Dairy and Food Commissioner, Hartford. State Chemist, Agricultural Experimental Station, New Haven.

Delaware.—State Health Officer, Dover. Chemist, State Board of Agriculture, Dover.

District of Columbia.—Health Officer, D. C.

Florida.—Commissioner of Agriculture, Tallahassee. State Chemist, Tallahassee.

Georgia.—Commissioner of Agriculture, Atlanta. State Chemist, Atlanta.

Hawaii.—Food Commissioner, Honolulu.

Idaho.—Commissioner of Public Health, Boise. State Chemist, Boise.

Illinois.—Superintendent, Division of Foods & Dairies, Department of Agriculture, 228 South Wabash Ave., Chicago.

Indiana.—Director, Food & Drug Bureau, State Board of Health, Indianapolis. Director, Bureau of Dairy Products, State Board of Health, Indianapolis.

Iowa.—Secretary of Agriculture, Des Moines. Chief Chemist, Department of Agriculture, Des Moines.

Kansas.—Secretary, State Board of Health, Topeka. Chief Food & Drug Inspector, State Board of Health, Topeka.

Kentucky.—Director, Bureau of Foods, Drugs & Hotels, State Department of Health, Louisville.

Louisiana.—President, State Board of Health, New Orleans. State Analyst, Board of Health, New Orleans.

Maine.—Chief, Division of Inspection, Department of Agriculture, Augusta.

Maryland.—State Food & Drug Commissioner, Baltimore. Chief, Bureau of Chemistry, Department of Health, Baltimore.

Massachusetts.—Director, Division of Food & Drugs, Department of Public Health, Boston.

Michigan.—Director, Bureau of Foods & Standards, Department of Agriculture, Lansing. Director, Bureau of Dairying, Department of Agriculture, Lansing. State Analyst, Department of Agriculture, Lansing. Director of Drugs & Drug Stores, State Board of Pharmacy, Lansing.

Minnesota.—State Dairy & Food Commissioner, St. Paul. Director of Laboratories, St. Paul.

Mississippi.—Commissioner of Agriculture, Jackson. State Chemist, State College.

Missouri.—State Health Commissioner, Jefferson City. Commissioner of Agriculture, Jefferson City. (Dairy and Ice Cream Laws)

Montana.—Director of Foods & Drugs, Department Public Health, Helena. Chief, Division of Dairying, Department of Agriculture, Labor & Industry, Helena.

Nebraska.—Deputy Secretary of Agriculture, Lincoln. Chief, Bureau of Dairies, Food, Drugs & Oil, Department of Agriculture and Inspection, Lincoln.

Nevada.—State Food & Drug Commissioner, Reno.

New Hampshire.—Chief, Division Chemistry & Sanitation, State Board of Health, Concord.

New Jersey.—Chief, Bureau of Foods & Drugs, Department of Health, Trenton. Chief, Bureau of Chemistry, Health Dept., Trenton.

New Mexico.—Director of Public Health, Santa Fe. State Dairy Commissioner, State College.

New York.—Director, Bureau Food Control, Department of Agriculture & Markets, Albany. Director, State Laboratory, Albany. Secretary, State Board of Pharmacy, Albany.

North Carolina.—Commissioner of Agriculture, Raleigh. State Food & Oil Chemist, Department of Agriculture, Raleigh.

North Dakota.—State Food Commissioner & Chemist, Bismarck. State Dairy Commissioner, Bismarck.

Ohio.—Chief, Dairy & Food Division, Department of Agriculture, Columbus.

Oklahoma.—Assistant Commissioner of Health, Oklahoma City. State Dairy Commissioner, Oklahoma City.

Oregon.—Director, Department of Agriculture, Salem. Chief Chemist, Department of Agriculture, Salem.

Pennsylvania.—Director, Bureau Foods & Chemistry, Department of Agriculture, Harrisburg. Director, Bureau of Professional Licensing, Department of Public Instruction, Harrisburg.

Rhode Island.—Director, Division of Foods and Drugs, State Department of Public Health, Providence.

South Carolina.—Commissioner of Agriculture, Columbia.

South Dakota.—Secretary, Dept. of Agriculture, Pierre. State Chemist, Vermillion.

Tennessee.—Commissioner of Agriculture, Nashville. Superintendent, Division of Foods, Fertilizers, Dairies, Department of Agriculture, Nashville.

Texas.—Director, Food & Drug Bureau, State Board of Health, Austin.

Utah.—Commissioner of Agriculture, Salt Lake City.

Vermont.—Secretary of Health, Burlington.

Virginia.—Director, Dairy & Food Division, Department of Agriculture & Immigration. Chief Chemist, Department of Agriculture & Immigration, Richmond.

Washington.—Supervisor, Division Foods, Feeds, Drugs, Dept. of Agriculture, Olympia. State Chemist, University of Washington, Seattle.

West Virginia.—Commissioner of Health, Charleston.

Wisconsin.—Acting Director of Agriculture & Markets, Madison. Chief Chemist, Department of Agriculture, Madison.

Wyoming.—Chief Deputy, Dairy, Food & Oil Division, Department of Agriculture, Cheyenne. State Chemist, Laramie.

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(1) the person who introduced such shipment or delivery into interstate commerce is the operator of the establishment where such food is to be processed, labeled, or repacked; or

(2) in case such person is not such operator, such shipment or delivery is made to such establishment under a written agreement, signed by and containing the post-office addresses of such person and such operator, and containing such specifications for the processing, labeling, or repacking, as the case may be, of such food in such establishment as will insure, if such specifications are followed, that such food will not be adulterated or misbranded within the meaning of the Act upon completion of such processing, labeling, or repacking. Such person and such operator, shall each keep a copy of such agreement until all of such shipment or delivery has been removed from such establishment, and shall make such copies available for inspection at any reasonable hour to any officer or employee of the Department who requests them.

(c) An exemption of a shipment or other delivery of a food under clause (1) of paragraph (b) of this regulation shall, at the beginning of the act of removing such shipment or delivery, or any part thereof, from such establishment, become void ab initio if the food comprising such shipment, delivery, or part is adulterated or misbranded within the meaning of the Act when so removed.

(d) An exemption of a shipment or other delivery of food under clause (2) of paragraph (d) of this regulation shall become void ab initio with respect to the person who introduced such shipment or delivery into interstate commerce upon refusal by such person to make available for inspection a copy of the agreement, as required by such clause.

(e) An exemption of a shipment or other delivery of a food under clause (2) of paragraph (b) of this regulation shall expire—

(1) at the beginning of the act of removing such shipment or delivery, or any part thereof, from such establishment if the food comprising such shipment, delivery, or part is adulterated or misbranded within the meaning of the Act when so removed; or

(2) upon refusal by the operator of the establishment where such food is to be processed, labeled, or repacked, to make available for inspection a copy of the agreement, as required by such clause.

(Similar provisions apply to drugs [Section 503A] and cosmetics [Section 603]. *Editor.*)

SECTION 501 (B)

(a) The name by which a drug is designated shall be clearly distinguishing and differentiating from any name recognized in an official compendium unless such drug complies in identity with the identity prescribed in an official compendium under such recognized name.

(b) The term "drug defined in an official compendium" means a drug having the identity prescribed for a drug in an official compendium.

(c) A statement that a drug defined in an official compendium differs in strength, quality, or purity from the standard of strength, quality, or purity set forth for such drug in an official compendium shall show all the respects in which such drug so differs, and the extent of each such difference.

SECTION 502 (D

(a) (1) The name of a substance or derivative required by or under authority of section 502 (d) of the Act to be borne on the label of a drug shall be the name by which such substance is designated in such section 502 (d), or such derivative is designated in regulations promulgated thereunder.

(2) A statement on the label of a drug of the name of a constituent, which constituent is a chemical derivative of a substance named in section 502 (d) of the Act, shall show the substance from which such constituent is derived and that such constituent is a derivative thereof.

(b) (1) If the drug is in tablet, capsule, ampul, or other unit form, the statement of the quantity of such substance or derivative contained therein shall express the weight or measure of such substance or derivative in each such unit. If the drug is not in such unit form the statement shall express the weight or measure of such substance or derivative in a specified unit of weight or measure of the drug. Such statement shall be in terms which are informative to the ordinary consumer and user of the drug.

(2) The statement of the percentage of such substance or derivative contained in a drug shall express the percentage by weight; except that, if both the substance or derivative and the drug are liquid, the statement may express the percentage by volume at 68° Fahrenheit (20° Centigrade), but in such case the statement shall be so qualified as to show definitely that the percentage is expressed by volume.

(c) The names, quantities, and percentages of all such substances and derivatives, and the statement "Warning—May be habit forming," shall immediately follow (without intervening written, printed, or graphic matter) the name by which such drug is titled in the part or panel of the label thereof which is presented or displayed under customary conditions of purchase.

(d) A drug shall not be considered to be misbranded under section 502 (d) of the Act by reason of failure of its label to bear the statement "Warning—May be habit forming," if such drug is not suitable for internal use and is distributed and sold exclusively for such external use as involves no possibility of habit formation.

SECTION 595 (B)

An application which is on its face incomplete in that it does not contain all the matter required by clauses (1), (2), (3), (4) and (6) of section 505 (b) of the Act shall not be accepted for filing, the Food and Drug Administration shall notify the applicant of such non-acceptance and shall specify the clauses in respect of which such application is on its face incomplete. Otherwise the date on which an application is received by the Department shall be considered to be the date on which such application is filed, and the Food and Drug Administration shall notify the applicant of such date. If the applicant withdraws his application, such application shall be considered as not having been filed.

SECTION 505 (C)

If the Secretary determines, before the date prescribed by section 505 (c) of the Act for an application to become effective, that he has no cause to issue an order under section 505 (d) of the Act refusing to permit such application to become effective, the Food and Drug Administration shall so notify the applicant in writing and such application shall become effective on the date of the notification.

SECTION 505 (I)

A shipment or other delivery of a new drug shall be exempt from the operation of section 505 (a) of the Act if—

(1) the label of such drug bears the statement "For investigational use only;"

(2) such shipment or delivery is made only to, and solely for investigational use by, an expert qualified by scientific training and experience to investigate the safety of drugs; and

(3) the person who introduced such shipment or delivery into interstate commerce holds a signed statement from such expert to the effect that he has adequate facilities for the investigation to be conducted by him, and that such drug will be used solely by him or under his direction for the investigation, unless and until an application under section 505 (b) of the Act becomes effective with respect to such drug.

The Wheeler-Lea Amendment to the Federal Trade Commission Act became law on March 21, 1938, and permits the Federal Trade Commission to regulate the advertising of foods, drug devices and cosmetics as part of its broad power over unfair methods of competition. The Act is distinguished from the Food, Drug and Cosmetic Act in that it is concerned with false advertising, while the latter bill deals with the adulteration, packaging and labeling of the products.

The other Federal statutes, listed at the beginning of this article, apply to particular industries requiring more detailed or more drastic regulations in the public interest and in view of their limited nature are not discussed in this article.

State Food, Drug and Cosmetic Acts have been enacted in Arkansas, California, Connecticut, Florida, Indiana, Louisiana, Nevada, New Jersey, New York, North Carolina, North Dakota, Oklahoma, Virginia, West Virginia and Wyoming. These Acts are largely modeled upon the Federal statute. Along with innumerable State laws regulating adulterating, packaging and labeling of specific foods and drugs, they apply to such products *sold* within each State whether or not (in most instances) the product is manufactured within that State. Thus manufacturers are obliged, in planning new packages, to consider the effect upon package design, labeling and structure not only of the Federal statute, but of the laws of the particular State in which the product is intended to be sold.

PROTECTION AGAINST COMPETITION—NATIONAL

by HUGH E. McMORROW*

Once the manufacturer has developed a package to his own satisfaction and, he hopes, to the satisfaction of his customers, he feels a very natural desire to protect his investment in time and money from others. More exactly, he wishes to merchandise something which no one else is permitted to sell, to possess the entire right to something wholly unique. He must, therefore, resort to the legal means of protection made available by the United States Government through the United States Patent Office and, to a minor extent, through the Library of Congress.

There are certain facts which he should clearly realize before he undertakes such protective measures. First, the protection furnished is purely passive rather than active. It is an establishment of his rights in the eyes of the law. Only he can call attention to infringements of those rights; the Government is not a policeman, but a court of appeal. Second, the protection provided by the United States, insofar as trade marks are concerned, applies only to articles used in *interstate* or foreign commerce. Third, all these means of protection and certain even more elementary rights accorded by common law, are based upon the *actual use* of the trade mark upon the goods. Continued sale of a product under a given name, design or type of package sets up the strongest possible claim to the means of identification used. Fourth, these means of protection can only be utilized to full benefit with the assistance of a competent patent attorney; frequently the extent of this protection depends entirely upon that one man's individual ability and grasp of the complex situation.

The United States Patent Office provides facilities for registration of trade marks—that is, names or symbols

* Patent Attorney

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or a combination of both—used by any manufacturer to identify a particular product.

The attorney selected will be able to advise, from his knowledge of the Trade Mark Law and from a search which he will conduct through the registered and published marks in the Trade Mark Division of the United States Patent Office, whether or not the mark is available for use. If the same mark, or any mark so closely resembling it as to cause confusion, has been registered by any person or firm on the same class of goods, or merchandise of the same descriptive properties, then the mark is obviously not available.

A mark already registered may often be purchased for a nominal sum, even if still in use. If not in use, it is possible to prove abandonment and thereby remove the bar to registration. Abandonment, however, is largely a matter of intent and sometimes difficult to prove.

There are many cases of trade marks in use by manufacturers who have secured neither Federal or State registration of the mark. In this event, the manufacturer who seeks to register his mark can only ascertain whether or not such an unregistered mark is in use, by his own observations in the particular field or by consulting with experts in that field.

In this connection, it should also be borne in mind that even if the Patent Office considers the mark registrable and passes it to publication, any persons, firms, etc., who may deem themselves injured by the granting of the registration, may file an opposition, whereupon evidence may be presented and a decision rendered by the proper tribunals of the Patent Office. This decision may be appealed to the courts for final decision.

Even after a registration has been passed to issue by the Patent Office, and the registration has been issued, a petition for cancellation may be filed by any persons, firms, etc., who may deem themselves injured by the registration and procedure similar to that in filing oppositions is followed.

Many manufacturers and laymen believe that, once they secure a Federal Trade Mark Registration, their rights are fully protected and nothing further need be done. However, the Government, of its own initiative, will take no steps to halt an infringer of a patent or trade mark. It is incumbent upon the owner of the infringed patent or trade mark to bring suit in Federal Court. When all the facts are presented at the trial and the patent or trade mark is found to be infringed, the Court will then issue a restraining order and probably arrange an accounting for damages and loss of profits.

If the construction of the container or package is novel, a mechanical patent may be secured, granting an exclusive monopoly to the inventor or his assignee for the term of seventeen years from the date of the patent.

If the design of the package or container is new and ornamental, a design patent may also be secured. Design patents are for terms of three-and-one-half, seven or fourteen years, depending upon the term applied for and the fee paid to the Patent Office.

Prints and labels may be copyrighted in the Patent Office, provided they are artistic creations used in the sale of goods. Such copyrights are for a period of 28 years and may be renewed for 28 years. Each must name, or picture, or be descriptive of, some particular article, or class of articles and, prior to filing application for copyright, must be originally published with notice of copyright. A label or print is considered published when it has been printed ready for use.

A label must be something attached to the goods, as by pasting onto the container. Cartons, cans, wrappers, etc., are classed in this category and may be registered in their entirety when submitted in flat form. A print cannot be attached to the goods, but must be used to advertise them; advertisements in magazines, street car cards, displays, etc., make up this group. Copyright gives the owner the right to sue directly in Federal Courts to obtain damages fixed by law.

There are instances, also, in which prints, pictorial illustrations, pamphlets, etc., may be copyrighted in the Copyright Division of the Library of Congress. But this type of copyright, though more economical, must not be confused with the Patent Office copyright.

To sum up, in protecting a package, there is first to be considered the matter of a registered trade mark which appears on the package, but which covers the article enclosed in the package; then a mechanical patent, if the construction of the package is novel; next, a design patent covering the package, if it is new and ornamental; and finally protection by way of copyright. Sometimes it is advisable to use all these forms of protection, where they can all be used.

PROTECTION AGAINST PENALIZATION

by **DANIEL R. FORBES***

Government regulation and restriction overshadow almost all other considerations in many departments of business today. Established trade practices are being upset right and left.

Nowhere is the confusion greater, or the penalty for a mis-step more severe than in the legislation and interpretations of that legislation applying to packaging. Not single, but double and triple damages await the unwary. Cartons or containers may become worthless or actual dynamite because of a poorly chosen word or an unwise illustration. Established products may become unmarketable by provisions of an FTC fair practices code. What the FTC permits, the FDA may condemn. A trade mark may be good on the present products, but become an infringement by the addition of a new item or sales in a new state.

The package bears the brunt of this legislation, not so much because of itself, but because it is the definition, explanation and presentation of contents to the public. Few products are illegal in themselves; any firm is entirely at liberty to market almost anything, regardless of who else sells the same thing—except in the case of

* Attorney

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patented formulae or constructions. The quantity, the manner of preparation, the quality and the price—except in certain specific and limited fields—are left to the manufacturer's discretion. It is not *what* the product is, but *how* it is represented that the Government seeks to control. The package conveys that representation.

The intent is not to hamper legitimate enterprise, regardless of frequently expressed opinions. Common table salt can be sold for a dollar a gram—but only when labeled as such, and not as "Crystallized Sea Water"—or the Food and Drug Administration may suspect an intent to deceive. Plain grain alcohol has its uses, but, under the name of Essential Licquer or the Holy Spirit, it would never get by the Federal Alcohol Administration. If Chinese bean sprouts seem to be sweeping the market under one brand name, any other manufacturer may compete in the sale—providing he does not attempt to cling too closely to the originator's coat tails. Misbranding, misrepresentation, undue emphasis, exaggerated claims, unfair competition and imitation or outright piracy all are offenses committed by the package—not the product. In attempting to eliminate them, Governmental authority reaches the manufacturer through that outward aspect of the goods he sells.

Unfortunately, the simple and direct intent becomes clouded by the multiplicity of rulings and supervisory bodies. Three powerful bodies, however, stand heads and shoulders above the rest.

Of these three, the Federal Trade Commission is perhaps the most important. Its activities cover all competitive business. It serves as the enforcing arm of the Food and Drug Administration. Even when an action brought by the FTC on behalf of the FDA, however, is adjusted to the satisfaction of the former, the FDA still remains at liberty to continue action independently if it sees fit. A part of the Commission's police work are the Robinson-Patman Act, problem to both buyer and seller, and the Clayton Act. Thus it may affect, through its manifold operations, many aspects of a single packaging or merchandising problem. Every piece of advertising or display material, every container or label sent across a state line is subject to this body's scrutiny.

The recently enacted Food and Drugs Act is of greater concern to manufacturers of packaged foods, drugs, cosmetics and devices than even the new provisions of the Federal Trade Commission Act. The powers of the Secretary of Agriculture have been enormously increased. By regulation, he may prescribe forms of labeling. The very form of the package may be held deceptive if it makes the contents seem greater than they actually are.

The regulations promulgated by the Secretary will have the dignity of law if predicated upon substantial evidence introduced at hearings held for their consideration. Thus the manufacturer has his day in court before the regulations which control his conduct are formulated, but unless he prepares his facts and presents them properly, the results may be disastrous.

The legal principles which control the enforcement of these laws are relatively simple. The greatest problem is to find the facts and, having found them, to interpret them to the best interest of the public with the least handicap upon the merchant who offers merchandise for sale to the public.

The greatest danger lies in the tendency of Government agencies to give highly technical and literal meaning to words used in commerce. Few words have an exact meaning. They mean whatever the public understands them to mean. The foresighted manufacturer of packaged merchandise will start now to find out the meaning of the words he employs to describe his product—that is, the meaning the consuming public gives them. He will then consult both scientific and legal counsel to determine if the product lives up to the representations, as is required by law. He will thus be prepared to offer "substantial evidence" in support of or in opposition to regulations proposed by the Department of Agriculture. He will be in a position to design and word his labels and advertising with confidence that he is not misleading the public. That, shed of all legalistic verbiage, is all that the new law says he shall not do.

The Federal Alcohol Administration, covering the more limited field of alcoholic beverages, functions in a very cooperative and helpful manner. This attitude in major problems, however, does not prevent a rigid and unyielding viewpoint in minor matters. The expense of scrapping costly labels and display material not properly reviewed in advance, is the penalty paid for lack of foresight.

The Federal Alcohol Administration holds the power of life and death over any business operating under its authority. Its administrator exercises a more complete and exacting control over labeling, packaging and advertising than is extended to any other Federal agency in any other field—a control enforced by the issuance, denial, or revocation of basic permits without which business cannot be conducted. The packaging effort unapproved will never be seen by a customer if this body so dictates, regardless of expense and trouble to the interested distiller or rectifier.

Apart from these three omnipotent organizations, a number of others touch, to a greater or lesser degree, various aspects of packaging in various fields. A dozen independent bureaus may have rulings affecting a single, seemingly inconspicuous, piece of paper or cardboard. The Post Office, the Bureau of Internal Revenue, the Interstate Commerce Commission and a number of others, all have definite opinions regarding packages, or parts of packages, coming within their authority. Woe betide the manufacturer who "didn't know" and went ahead regardless.

States also have frequently introduced overlapping and frequently contradicting, regulations applied to packages sold within their borders. This is particularly true in regard to medicinal preparations and foods. It may not be necessary to consider the restrictions in California when distribution is confined to the east, but where a product is sold—or is intended to be sold there in the future—it must conform in packaging or take the consequences sooner or later.

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Direct Color Photography

by C. W. BROWNE*

Almost as old as photography itself is the desire for accurate color photographs. Vogel in 1871 discovered—by accident—how to isolate the primary colors on a photographic plate, but it was more than (30) thirty years later that a patent was granted (to Lumiere) for making transparencies, which were inadequate and inaccurate in reproducing natural colors.

Today there are a number of methods long past the experimental stages. The early processes required long exposures, thus automatically eliminating all but still-life subjects. Today, at least one process is as fast, if not faster, than ordinary photography, thus permitting an infinite variety of life and action scenes. During the early days the engraver faced serious problems; today he can work from the original negatives, usable as separations; or he may produce his color separations from the transparency which contains all the colors.

Probably the first uses of direct color reproductions were in editorial material. But advertisers weren't long in whole-heartedly adopting the process for periodical advertising and for booklets. In the field of packaging, color photography has made a start; but it is only a start, when one stops to consider the possibilities. For example, labels for canned fruits and vegetables have traditionally carried illustrations—more or less fanciful—picturing the contents of the cans. Now direct color photography has invaded the province of the sketch artist and the cans on the grocer's shelves not only carry accurate color pictorials of the actual contents of the can, but the product is often shown as it appears when served. Little imagination is needed to forecast applications for drug products, confectionery, and cosmetics.

Today, while it may be taken for granted that advertising and packaging need color, the shrewd buyer—forced to keep costs down and at the same time to keep up with competition—asks these questions about direct color:

"How is it done?"
"What are its advantages?"
"Does the public want it?"
"What are the pitfalls?"
"What does it cost?"
"Let's see some examples."

Photographic Processes

The three principal basic methods for obtaining direct color photographs are:

1. By the "repeating back" camera.
2. By the "one shot" or "split beam" camera.
3. By the "color-in-the-film" method.

The "repeating back" camera makes three and sometimes four different negatives, through color filters. The exposures are of varying length for the different filters. These negatives are usable as continuous tone color separation negatives. The camera is rigidly mounted and adjustable for shots from any angle. Faster work than four seconds for the several exposures is hardly to be expected; therefore this type of camera is at its best for still life. Living models and perishable products are more difficult but by no means impossible. Action scenes are precluded. Shots on location are rare. Studio scenes with carefully planned "props" and trained models as arranged by expert operators (Steichen, Bruehl, Muray, White and others) have produced amazing results. Capable of greatest color accuracy, this method is probably also the most expensive.

The "one shot" or "split beam" camera, by means of its ingenious internal construction, is devised to deflect the light through filters to produce three continuous tone color separation negatives with a single exposure. Though the single exposure means a considerable gain in time, advocates of the "repeating back" method contend that the "one shot" camera is not as accurate. For many types of subjects, the discrepancy is not serious, particularly if the original is reduced in reproduction; though of course enlargement may magnify defects. One of the principal advantages of this type is portability.

"Color-in-the-film" methods have received a tremendous impetus during the last few years. By this process, a transparency is produced which is usable both as a color guide and for making color separation negatives. Speed, flexibility and adaptability of the method open up a far wider field for color photography than it has hitherto enjoyed. There are several practical processes. Three best known methods are:

Finlay: The original negative is made through a taking screen of 175 lines to the inch. From this negative is made a contact positive which, in turn, (by means of a viewing screen containing a reseau of the primary colors) is used to make the color transparency. Several sizes are available, up to 8 in. by 10 in.

Not all engravers are enthusiastic about the Finlay method, contending that the relatively coarse screen makes it difficult to eliminate the pattern, even when using the "block-out" screen developed by the inventor.

Dufaycolor: The film, available either in rolls or cut sizes ranging from miniature to 8 in. by 10 in., is coated with minute dots 1100 to the inch, sensitized to the three primary colors. Developed, the film becomes a negative and by a reversal process becomes a positive colored transparency. Developing is handled either by the

* Manager of Marketing Service, The United States Printing & Lithograph Co.

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manufacturer of the film or by the local photographer, the time element in the latter case comprising a distinct advantage in commercial work.

The Dufay screen or pattern is not apparent in reductions or in reproductions of the same size, but is sometimes difficult to eliminate from enlargements greater than 2½ diameters.

Kodachrome: Most recent to appear, this method seems to possess many advantages. There is no screen or pattern in the film. From exposures as fast and sometimes faster than black and white photography, continuous tone negatives are developed which by a reversal process become positive transparencies in color. The film is available for 16 mm., 35 mm. and bantam size cameras and in a new series of sizes for professional work up to 8 by 10 in. Absence of screen permits enlargement almost indefinitely. Developing, which is handled solely by the manufacturer, ordinarily requires from six to eight days; but recently the processing service for professional purposes has been much improved, so it is now possible to obtain three or four day service for points within a few hundred miles of Rochester.

In the case of both Dufay and Kodachrome, complaint is made that some colors are fugitive. Color accuracy is not 100 per cent dependable with either method, but future progress will undoubtedly produce improvements in technique and materials. Films for Dufay and Kodachrome are surprisingly moderate in price.

As yet, for any of the methods mentioned, no perfectly satisfactory method—from the standpoints of speed and economy—have been evolved for making colored prints. With Finlay, any number of black and white contact positives can be made from the original negative. The Dufay process permits any number of duplicate positives in black and white to be made from any Dufay film. Kodachrome permits duplicate positives from the original negative *before* the reversal process. But the making of photographic prints in color, on any basis comparable with ordinary photography possibilities, has not kept pace with the technique of taking the shots. If it were safe to prophesy, the writer would venture to predict that that will be the next stop. Among the several methods of making color prints are:

Carbro: Slow, difficult, costly and subject to damage during process from temperature fluctuations. The process really amounts to making an assembly of three layers of gelatin, one from each of the positives produced from the color separation negatives. Trial assembly being impossible, an error in the process means beginning all over again. The finished print, which may be retouched and corrected, makes a very fine piece of finished art from which the engraver can work.

Chromatone: Somewhat faster than Carbro; consists of a lamination of three color-toned collodion films in register on a paper or glass mounting. Trial assembly is possible before mounting; any one of the three films may be re-made to obtain corrections.

Wash-off relief: From the separation negatives are made collodion emulsion transparent positives, which after development absorb dye in correct tonal relativity; this dye in turn is transferred to paper. In other words, the surface of the paper is dyed to correspond with the colors of the original subject. Correct color balance may be determined by trial assembly of the transparent positives prior to transferring the color to the paper. Reasonably fast and capable of being retouched, the wash-off relief is in fairly wide use for producing engraver's color guides.

Prism Prints: These are made by an imbibation process, from three-color separation negatives or from Kodachrome or Dufay transparencies. These prints are available in several grades at moderate costs. Except perhaps in their finest grades, it is not suitable to use these prints as copy for plate making (except as color guides) particularly for highest grade work; but they are proving especially effective for "merchandising" displays to dealers and in direct mail campaigns.

Accurate Reproduction

For the advertiser or package buyer, successful reproduction is the all-important point. Fortunately, engravers and plate makers in both typographic and lithographic fields have kept fully abreast of the times. As a matter of fact, the engraver and plate maker can frequently be counted on to improve the original photograph; for, as one skillful craftsman expresses it, "All these processes must undergo correction."

Whatever method is used for making the original shot, separation negatives are required for either lithographic or typographic plate making. The "repeating back" and "one shot" cameras, as already noted, produce continuous tone color separation negatives without intermediate processes; but "color-in-the-film" methods necessitate the making of separation negatives as an additional operation. This is done from a colored print—and with some lithographers, the trend is increasingly in this direction—or it may be done direct from the transparency. The latter operation is simple. Backlighted through an opal diffusion glass, the transparency is photographed through filters for the three separations. Once the separation negatives are supplied, from then on the procedure becomes that of regular plate making.

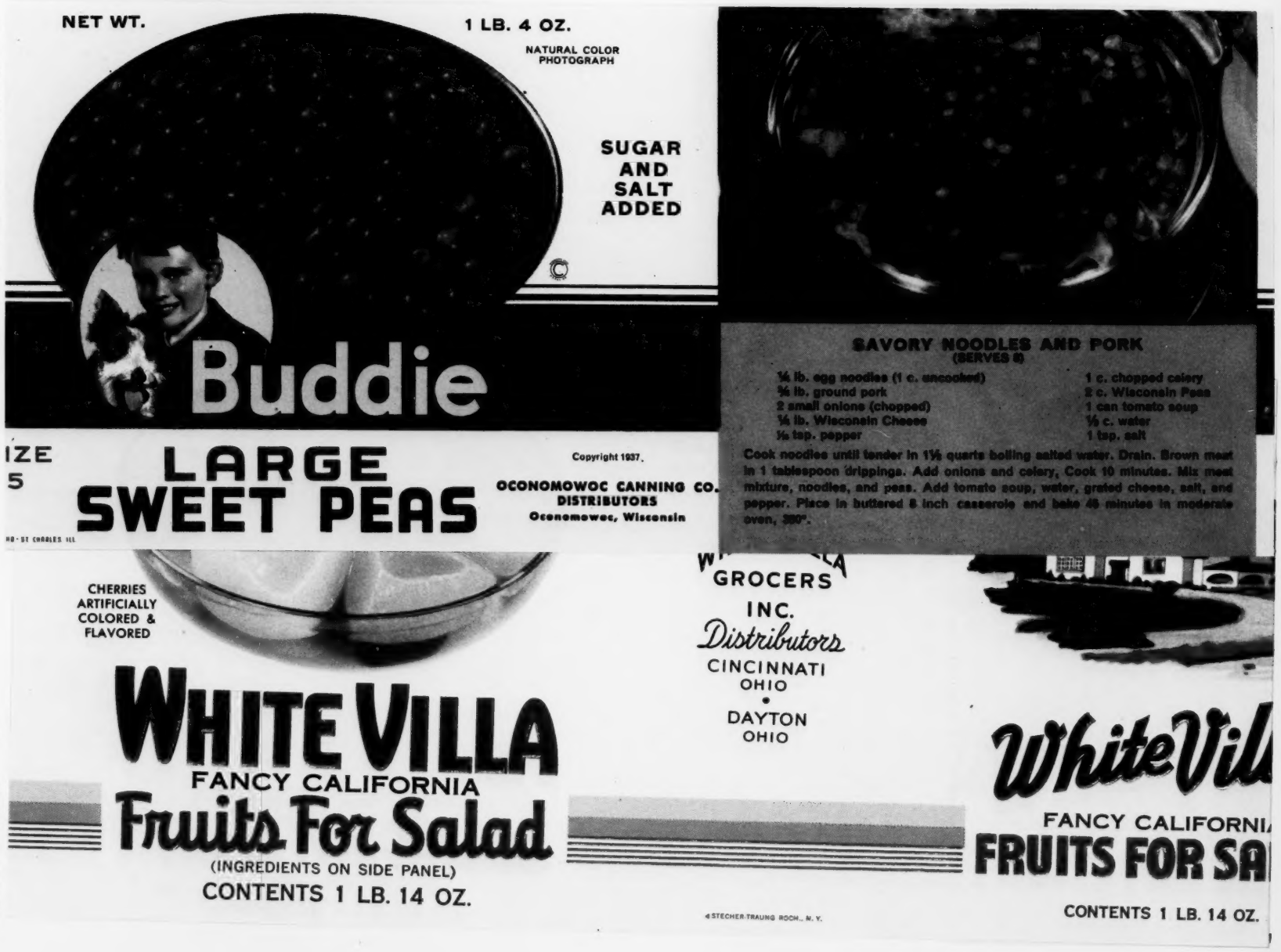
Advantages of Direct Color

What advantages has direct color photography not possessed by other methods of preparing original art for color reproduction? The tide is rising rapidly. Is it a passing fancy or is direct color here to stay?

Without a doubt, it is here to stay. Improvements in the technique have been fast and more will come—probably soon. Direct color photography meets the demand for life, action, reality, depth, full detail, third dimension—in color. Note that the word "accuracy" has been omitted from this list. That should be included in the list of demands, but it cannot yet be stated without qualification that any of the photographic processes, per se, are 100 per cent accurate as to natural color. For reproduction purposes, the deficiencies are met by corrections in plates and by means of ink selections.

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Courtesy The United States Printing & Lithograph Co.

Courtesy Stecher-Traung Litho. Corp.

Two examples of the recent use of direct color photography on can labels. The Buddie label utilizes direct color reproduction of the product, as poured from the can, on the front vignette and a direct color photograph of a prepared recipe utilizing the product on the rear panel. The White Villa label utilizes a direct color vignette on one panel and a non-photographic illustration on another.

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Not the least of the advantages is in the saving of time. A colored sketch of acceptable quality, even of a comparatively simple subject, requires ample time. Direct color photography shortens the interval between conceiving the idea and going to press with it, even allowing for studio preparations of elaborate scenic effects, models and "props," as well as delays incidental to developing shots, making color prints, etc., referred to above.

A typical example from the food packaging field will illustrate many of the points. The manufacturer of a sandwich spread, let us say, feels that a pictorial display container will help sell the product. That product of itself may not appear particularly interesting or appetizing—it may be a gooey mass resembling mixed concrete or facial cream. But put some sandwiches on a cocktail tray, surrounded by silverware, glass and hors d'ouvre and you present an appetite appeal with a powerful sales urge. The subject calls for reality, color, detail.

Regardless of the method chosen for producing the original art, the first problem is artistic selection, arrangement and posing of the subject. Make no mistake, that calls for a high degree of artistry. The expert photographer—and it's real economy to employ an expert—knows all the tricks which produce the correct relative emphasis; he covers the silver with a thin film of metal polish to subdue too strong a gleam; he puts a tiny drop of oil on an olive to bring out a highlight; he adjusts his floodlights to make the best use of the glitter of glassware; and he puts a tracing of the layout on transparent cellulose over his ground glass to insure absolutely correct position of the various objects.

For a subject of this nature, to provide original art which will accomplish the desired purposes, it would seem obvious that we may rule out the other two possible methods, namely, the colored sketch and the "color applique." Because of the perishable character of the subject, even the most skillful and painstaking artist would be at a disadvantage—both as to time and technique—in depicting full detail of color and texture. True, the first color camera shot might not be satisfactory, either necessitating a fresh start or corrections on color print and plates. However, Dufay and Kodachrome are so moderately priced that a whole film could be exposed, if desired, and a selection made of the shot most suitable from the standpoint of posing, coloring and depth of detail. Even allowing time for developing, you're still days ahead of the schedule required by the other two methods.

And the public—literally in a case like the above—eats it up—likes direct color photography well enough to respond with purchases of articles so presented. That statement can be attested by sales curves.

This response is partly the natural instinctive or emotional response to the stimulus of color, but that isn't all. The prospective purchaser has a perfectly rational desire to see an accurate pictorial representation of an article or its uses and color photography appeals to the consumer as an unimpeachable vehicle for "Truth in Advertising." Color photography even has the power to glorify a product to the point where the truth may be somewhat stretched, but this can scarcely be considered a reflection on the process.

Of course, not all subjects require or should have the kind of treatment given by direct color photography. There are many packages whose size and surface texture preclude its effective use. It might be difficult, for instance, to put an effective direct color illustration on a cosmetic package—though such pictorials would undoubtedly be appropriate enough on the display material.

Cost and Time Considerations

After it has been decided that the subject genuinely calls for it and that its use will be thoroughly justified in terms of sales effectiveness, color photography is still full of "ifs." If the subject has been properly posed and lighted for relative advertising emphasis; if the photographer has expertly handled the exposures; if the development of negatives and positives has been timed to the split second; if the plates have been carefully made; if the printing is in perfect register on correct stock—the results will be all you have hoped for. Lower costs for direct color in all probability will result in a great increase in its use; but lower costs must not mean any decrease in the discrimination and judgment exercised by the art buyer. He has the opportunity to use a method of preparing original art which promises to be quicker, more accurate and perhaps cheaper; but an artistic brain behind the camera is just as essential as one behind the brush and an effective layout is just as imperative for direct color as for any other kind of illustration. The point has been reached where just direct color won't do; it must be *good* direct color, intelligently used.

In considering costs, the point to keep in mind is, "By which method can I best accomplish what I want and what the subject calls for?" Specific cost comparisons are a little difficult to arrive at. For instance, a hand-painted food pictorial for canned goods may cost from $25 to $200, depending on the artist, and the same artist would probably charge correspondingly for a "color applique"—if that happened to be in his line. And there seems to be just as wide a variation in the prices asked for direct color shots of the same type of subject. Current quotations range from $25 up, sometimes including a carbro or wash-off relief print.

Original art for advertising subjects affords no more definite comparison. Direct color shots utilizing models and involving elaborate studio sets sometimes commanded prices in the four figure class, though such prices are rather rare today. The field is full of good photographers who have mastered an art formerly practiced by only a few and price can no longer be considered an insurmountable obstacle.

As a general thing, after the original art is approved, plate making and printing costs will run about the same for all types of art. It should be noted, however, that usually direct color photography can be reproduced either typographically or lithographically in four colors; whereas other types of art may require more. This means a saving in plate making expense and press run costs, with the probability of less spoilage.

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Testing and Advisory Institutions

A number of Governmental agencies, trade associations, testing laboratories and business firms are in a position to render assistance to packagers in planning and testing packages, package parts, and displays. For purposes of convenience, they are here listed in three groups: (1) Governmental agencies; (2) General advisory and testing institutions—including a number of trade associations, serving particular industries using packages, which have done research or testing work on packages used within particular industries served; (3) Associations maintained by various groups of package and package material suppliers. For ready reference, each listing contains subheadings giving periodicals, nonperiodical publications, and advisory services maintained by the group referred to.

Modern Packaging and its associate publication, Modern Plastics, maintain permanent exhibits of packaging and plastics at their New York City editorial offices. Visitors are welcome from 10:00 A.M. to 4:30 P.M. week days. Special exhibits are held at various periods during the year. The entries and winners in the All-America Package Competition are usually on display during March and April. Entries and prize-winners in the annual Plastics Competition are on display during October and November.

A wealth of material and machinery information will be found at the Packaging Show, held annually under the sponsorship of the American Management Association, New York City, in either Chicago or New York. The 1940 show will be held in New York, March 25–29. The 1941 show will probably be held in Chicago.

GOVERNMENTAL AGENCIES

Agricultural Marketing Service
United States Department of Agriculture
Washington, D. C.

Charged with administration of U. S. Standard Container Acts of 1916 and 1928, relating to containers for fruits and vegetables.

PUBLICATIONS: List of manufacturers of fruit and vegetable baskets and hampers.

Service and regulatory announcements.

Summary of Federal and State laws relating to containers for fruits and vegetables.

Circular on relationship between weight and volume of fruits and vegetables.

Summary of crates and boxes for fruits and vegetables standardized by State laws and regulations.

Synopsis of State laws relating to "Legal weights per bushel of fruits and vegetables."

Circular on the dimensional method of testing—containing 21 schedules of standard specifications.

Bulletin on containers for fruits and vegetables.

ADVISORY SERVICE: Maintains laboratory for volumetric and dimensional testing of containers as to their compliance with the requirements of the Standard Container Acts.

Bureau of Fisheries
Department of Commerce
Washington, D. C.

A Federal bureau concerned with the conservation and economic use of the fisheries of the United States.

ADVISORY SERVICES: The Division of Fishery Industries of the Bureau is primarily concerned with the commercial fisheries and their utilization.

The technological staff of the Bureau carry on scientific investigations dealing with the utilization, handling, and preservation of fishery products. Studies of improvements in methods of handling, freezing, and packaging fishery products.

Bureau of Foreign and Domestic Commerce
Department of Commerce
Washington, D. C.
Thomas E. Lyons, Chief, Transportation Division

The Commerce Department's agency for packing research and dissemination of information.

PUBLICATIONS: "Packaging for Foreign Markets" (now in preparation). A comprehensive manual describing export containers and methods of packing for maximum protection of goods in export transportation.

Series of bulletins on the various types of packages entering domestic commerce. Bulletins on fibre containers, wooden boxes, wooden crates, plywood boxes, wire-bound boxes, nailed wooden crates, etc.

Census of Manufactures and Census of Business
The Bureau of the Census
Department of Commerce
Washington, D. C.

ADVISORY SERVICE: Outstanding source for authoritative statistical information covering the production of packaging materials, containers, and packaging machines, and production of certain classes of packaged goods; also wholesale and retail distribution by kinds of business which might be used to measure markets for various products.

Federal Register
Washington, D. C.

Published by the Division of the Federal Register, The National Archives, Washington, D. C., daily. 10¢ per copy, $1 per month or $10 per year, payable in advance. Remittance should be to Supt. of Documents, Government Printing Office, Washington, D. C.

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The *Federal Register* publishes all proclamations, executive orders and rules, regulations and orders and notices issued by the President and the various departments of the Government. Text of regulations, etc., affecting packaging first appear in this publication.

Federal Trade Commission
Washington, D. C.

ADVISORY SERVICES: The trade practice conference procedure has for its purpose the establishment of trade practice rules for the protection of industry, trade and the purchasing public against unfair competitive practices. Under this procedure, effective means are made available for the voluntary participation and cooperation, with the Commission, of industry groups and other interested or affected parties in the establishment and observance of rules of fair practices. Thus cooperative action among competitors within the law and under Commission supervision may properly be taken to end trade abuses.

PUBLICATIONS: Trade practice conference rules available on specific projects; for example, the recommendation to the spice trade of standard containers for retail units.

Forest Products Laboratory
Madison, Wis.
C. P. Winslow, Director

A part of the research organization of the Forest Service, U. S. Department of Agriculture.

PUBLICATIONS: Technical Bulletin 171—Results of container research, including fibre boxes.
"Principles of Box and Crate Construction."

Library of Congress
Washington, D. C.

ADVISORY SERVICES: U. S. Copyright Office, a branch of the Library, registers prints and pictorial illustrations, including such as are employed in gift packaging, when they have been first published with the copyright notice and the other conditions of the law have been complied with. Prints and labels relating to articles of manufacture, however, are registered in the United States Patent Office.

National Bureau of Standards
Washington, D. C.

ADVISORY SERVICES: The National Bureau of Standards is charged with the development, construction, custody and maintenance of reference and working standards and their improvement and application in science, engineering, industry and commerce.

The Bureau cooperates actively with all groups—consumers and distributors as well as producers—interested in establishing dimensional and quality standards, eliminating excess sizes and varieties, and in unifying specifications.

The Division of Simplified Practice of the Bureau assists industries in the development and maintenance of Simplified Practice Recommendations for sizes and varieties of packages and packaging materials.

U. S. Food and Drug Administration
Department of Agriculture
Washington, D. C.

PUBLICATIONS: Copies of statutes and regulations.

ADVISORY SERVICE: Advice as to what constitutes adulteration and misbranding. The Administration's powers have been greatly broadened under the new Federal Food Drug and Cosmetic Act and packagers of any foods, drugs, drug devices, or cosmetics should always consult this body in advance of the issuance of any package to ascertain, insofar as possible, that the package complies with labeling provisions and restrictions on package shape, size or materials.

United States Patent Office
Washington, D. C.

PUBLICATIONS: Printed copies of patents, trademarks, and designs. Pamphlets on patent laws, trade-mark rules and statutes, print and label rules, etc.

The Official Gazette—an index of the patents issued and trademarks registered each week.

GENERAL ADVISORY AND TESTING INSTITUTES

American Bottlers of Carbonated Beverages
224 Southern Building
Washington, D. C.

PERIODICALS: *A. B. C. B. Monthly Bulletin.*

PUBLICATIONS: Technical monographs covering phases of manufacture.

American Management Association
330 West 42nd Street
New York, N. Y.
Henry J. Howlett, Secretary

ADVISORY SERVICE: Maintains a research department and reference library on various problems in packaging for the use of company members.

American Standards Association
29 West 39th Street
New York, N. Y.
P. G. Agnew, Secretary

PERIODICALS: *Industrial Standardization and Commercial Standards*—monthly.

PUBLICATIONS: Year Book—Approved American Standards. Index of American Standards.

ADVISORY SERVICE: Through its technical staff, through its library, through the pages of its magazine, through free copies of standards, and through correspondence, the American Standards Association keeps members in constant touch with existing standards that affect their business interests.

Container Testing Laboratories, Inc.
45 East 22nd Street
New York, N. Y.
T. J. Gross

ADVISORY SERVICE: Laboratory facilities for tests on containers of all types, paperboard products, gummed tape, and packing accessories.

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Cruess, W. V. and Associates
Fruit Products Division
College of Agriculture
University of California
Berkeley, Calif.

ADVISORY SERVICE: Provides data on the packaging of fruit products and similar merchandise, particularly dried fruits, fruit juices, and frozen foods.

Gummed Industries Assn., The
19 West 44th Street
New York, N. Y.

ADVISORY SERVICE: Maintains a Certified Products Bureau and a testing laboratory for the determination and preservation of quality standards for sealing tape.

Institute of American Meat Packers
59 East Van Buren Street
Chicago, Ill.
Henry D. Tefft, Director, Department of Packinghouse Practice and Research

PUBLICATION: "Institute Standards for Packinghouse Supplies, Packs and Equipment."

Metropolitan Life Insurance Company
New York, N. Y.
William J. Barrett, Manager, Policyholders Service Bureau

PERIODICALS: *Executives Service Bulletin.*

PUBLICATIONS: "Use of Style and Design in Industry."
"Packaging—A Selected, Classified Bibliography."
"Product Development."
"Transparent Wrappings as a Sales Aid for Food Products."

National Confectioners' Association of the United States, Inc.
224 South Michigan Avenue
Chicago, Ill.
Max F. Burger, Secretary

PERIODICALS: *General Information Bulletin*—monthly.
Trademark Bulletin—issued every three weeks.
Merchandising—advertising bulletins.
Food and Drug Bulletins
Wage and Hour Bulletins.

National Paint, Varnish and Lacquer Association, Inc.
2201 New York Avenue, N. W.
Washington, D. C.
R. K. Shannon, Director, Trade Mark Bureau

PERIODICALS: *1940 Trade Mark Directory.*

Quinn Company, Don L.
609 N. La Salle St.
Chicago, Ill.

ADVISORY SERVICE: Maintains laboratory for box testing and container designing.

Railway Express Agency, Inc.
230 Park Avenue
New York, N. Y.

ADVISORY SERVICE: Gives counsel to shippers or other interested parties on "good packing," "good wrapping," and "good marking."

Traffic Group of the National Retail Dry Goods Assoc.
101 West 31st Street
New York, N. Y.

PUBLICATIONS: Report on unit packing, shipping containers, and store packing.

United States Printing and Lithograph Co., The
Cincinnati, Ohio

ADVISORY SERVICES: Maintains a trade-mark bureau which contains all brand-names registered in the Patent Office at Washington, plus twice as many more unregistered brands. Nominal investigating charge of $1.50 per name.

INDUSTRY-MAINTAINED INSTITUTIONS

American Waxed Paper Association
Lincoln Liberty Building
Philadelphia, Pa.
Geo. J. Lincoln, Jr.

ADVISORY SERVICE: This organization designates standard requirements for packaging and standards on quality, weight, etc., for waxed and closely related papers.

Cooperage Industries of America, Inc., The Associated
411 Olive Street
St. Louis, Mo.

PERIODICALS: *The Wooden Barrel*—monthly.

PUBLICATIONS: "Grade Rules and Specifications covering Tight Staves and Heading."
"Grade Rules and Specifications covering Slack Staves, Heading and Hoops."

ADVISORY SERVICE: On the construction and proper uses of tight and slack wooden barrels and kegs.

Cotton-Textile Institute, Inc., The
320 Broadway
New York, N. Y.
C. K. Everett, Manager, New Uses Section

ADVISORY SERVICE: Sponsors service tests and experiments with cotton bags and cotton fabrics for packaging purposes.

Folding Paper Box Manufacturers Association, Inc., The
2 Lafayette Street
New York, N. Y.

ADVISORY SERVICE: Maintains a committee which sponsors lectures on carton designing and printing, and innovations in sales and distribution methods.

Freight Container Bureau
Association of American Railroads
30 Vesey Street
New York, N. Y.
Edward Dahill, Chief Engineer

PUBLICATIONS: Numerous bulletins and pamphlets on the economical and efficient methods of packing and shipping various commodities.

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Glass Container Association of America
19 West 44th Street
New York, N. Y.
E. G. Ackerman, Assistant Business Mgr.

PUBLICATIONS: *Beer Bottler*—a bulletin on developments in glass packages for ale and beer.

Glas-Pak Age—a periodical treating with advantages in the packaging and merchandising of foods in glass.

Bottle Front—a publication dealing with the marketing of milk in glass.

Glazed and Fancy Paper Manufacturers' Association
902 Union Trust Building
Providence, R. I.
Arthur A. Thomas, Executive Director

ADVISORY SERVICE: Acts as a clearing house for manufacturing and marketing problems through personal and group committee contacts. Maintains a Statistical Bureau, a Registration Bureau for designs and trade names and a Credit Bureau.

Label Manufacturers National Assn.
60 East 42nd St.
New York, N. Y.
C. R. Cosby, Executive Secretary

Gathers and disseminates information regarding problems related to label manufacture.

Manufacturing Chemists' Assn. of the United States
608 Woodward Building
Washington, D. C.
Warren N. Watson, Secretary

PUBLICATIONS: Issues bulletins relating to the transportation of chemicals, with particular reference to the improvement of existing containers and the development of new containers.

National Canners Association
1739 H Street, N. W.
Washington, D. C.
Secretary

PUBLICATION: Directory of commercial canners.

National Container Association
205 W. Wacker Drive
Chicago, Ill.
G. R. Browder, Treasurer & Traffic Manager

ADVISORY SERVICE: Information in connection with devising fibreboard packages.

National Paperboard Association
80 E. Jackson Blvd.
Chicago, Ill.

PUBLICATION: Booklet of Paperboard Standards, containing the Standard Gauge Lists for Boxboard.

ADVISORY SERVICES: Conducts a complete statistical service for members.

Cooperates with the U. S. Department of Commerce and other Governmental bureaus, as well as with the users of paperboard.

Information on freight traffic and freight classification subjects.

National Paper Box Manufacturers Association
1106 Liberty Trust Building
Philadelphia, Pa.
William R. Kreeger, Secretary

ADVISORY SERVICE: Clearing house for information on set-up paper boxes.

National Paper Trade Association of the United States
220 East 42nd Street
New York, N. Y.
A. H. Chamberlain

ADVISORY SERVICE: This organization has done research on gummed tape, paper bags, etc.

National Retail Dry Goods Assn.
Merchandising Division
101 West 31st St.
New York, N. Y.

PUBLICATIONS: *Retailer's Reference Book of Federal Trade Commission Rulings*. A digest of Federal Trade Commission rulings of particular importance to retailers, including in appendix form Federal Trade Commission trade practice rules for the fur, rayon and silk industries. The book includes sections on textile materials; non-textile materials; apparel and accessories; food, drug and cosmetics; small wares; home furnishings; miscellaneous items and misleading selling methods.

Paper Bag Manufacturers Institute
369 Lexington Avenue
New York, N. Y.
J. A. C. Kavanagh

ADVISORY SERVICE: This association maintains information files on paper bags and special variations thereof.

Standard Container Manufacturers Association, Inc.
Post Office Box 4697
Jacksonville, Fla.
Russell W. Bennett, Secretary-Manager

PUBLICATIONS: Bulletins on standardization and simplification of production.

Bulletins on packing and marketing of fresh fruits and vegetables.

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PAPER BOXES

SECTION TWO

Pages 31 to 98

SET-UP AND FOLDING BOXBOARD

FOLDING AND DISPLAY CARTONS

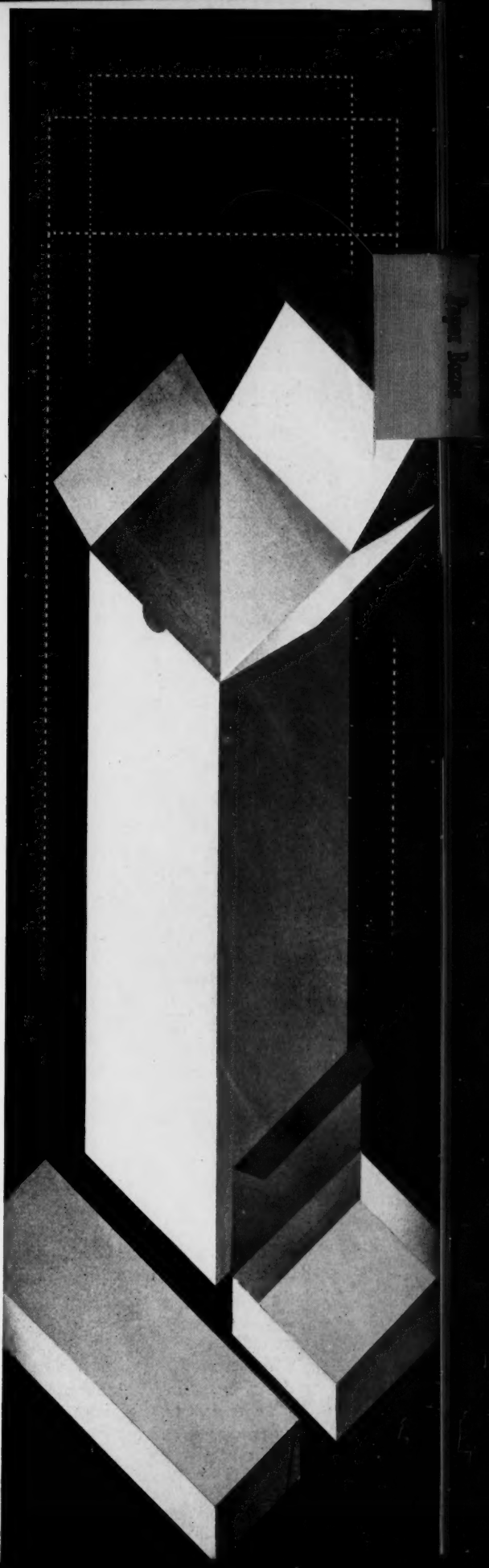
PARAFFINED AND WAXED CARTONS

STAYED AND STAPLED CARTONS

SET-UP PAPER COVERED BOXES

PAPER CONTAINERS FOR LIQUIDS

PERMANENT AND RE-USE BOXES



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Set-Up and Folding Boxboard

Set-up and folding boxboards are manufactured on the same machine, the difference being that created by the raw materials used in each in the process of manufacture.

Paperboard, as used for both types of boxboards, is made of old papers as much as possible. Old papers are cheaper than new pulp yet contain the same fibres as new pulp. New pulp is added to the furnish in sufficient proportions to bring the strength, bending quality, and color up to the required standard. Due to the many grades of waste papers and pulp, and to the multi-cylinder construction of a board machine, it is possible to produce an almost infinite variety of boxboards. Among the most common, however, are the following:

Varieties of Boxboard

Chip is made up almost entirely of mixed papers. Occasionally stronger fibres are added to produce **Test Chip.** The filler of most vat-lined paperboards is chip.

News is made of old newspapers. The gray color is due to disseminated printer's ink. News is usually used as the inner surface of other boards (e.g., white patent coated news back). Occasionally boards are made of **solid news.**

Manila got its name originally from manila rope fibres. Today manila contains no rope fibres. Boards and papers are still made of these fibres but the product is called "rope paper." Manila has come to mean a yellowish sheet containing 50 per cent or more of ground wood.

Non-bending manila is about two-thirds ground wood, one-third unbleached sulfite, plus some yellow dye.

Bending manila is the same except that the proportions are about 50–50.

Bleached manila is the same as the above two manilas, except that the yellow dye is omitted and some blue and red are added to neutralize the yellow of the ground wood.

Most **white patent coated** has a top liner made from bleached sulfite pulp and hard white shavings. Hard white shavings contain no ground wood. The filler of the board is usually chip.

Manilas, patent coateds, and other grades can be *colored* in the beater ("beater color") or on the calender ("calender stain"). They are then referred to as "colored boards."

Mist board has usually a top finish of news, or news and sulfite, to which has been added a quantity of dyed kraft fibres.

Solid boards contain no filler—precisely what the term indicates.

Clay-coated folding boxboard is the highest standard grade available for folding-box manufacture. Thus it is used widely for packaging drugs, cosmetics, liquors, cigars, and other products which are sold in attractive and convenient cartons. Like patent coated boxboard, clay-coated is made with a news center, on which is a liner composed of sulfite and white shavings. But onto the liner of clay-coated is applied mechanically a coating the base of which is clay and casein. This surface layer is then calendered to produce the desired high finish. The result is a smooth, uniform, firm sheet, especially suitable for coloring, printing and lithography. Among its other qualities, it does not become discolored when exposed to sunlight, which makes clay-coated most adaptable to counter and window displays, as well as for cartons.

Protective boxboards: There is increasing call for special boxboards which will protect their contents against undesirable changes, as from drying out, picking up moisture, staining with grease or water, or tarnishing. The demand for such special requirements is being met with lines of water-shedding, water-proof, moisture-proof and grease-proof boards.

The first three specialties differ in important respects. A water-proof board is not necessarily moisture-resistant and a moisture-proof board is frequently not water-resistant for long periods of time. The distinction between water-resistance, which means the ability to hold liquid water, water-shedding, which means the ability to shed water when temporarily wet for a few seconds, and moisture-resistance, which means the ability to resist passage of water-vapor, must be borne in mind.

Moisture-proof boards: Moisture-proof boards are used for wrapping foodstuffs, to keep moist food fresh and moist, or dry foods crisp and dry. Moisture-proof coating is obtained by use of wax, resin, or lacquers. Moisture-proof coated boards are, however, difficult to glue into boxes, because the coatings are water repellent.

There are interesting new laminated boards where the laminated material is moisture-proof, as asphalt, wax or resin, and the liner consists of sulphite, grease-proof or glassine. Since the moisture-resistant material lies beneath a paper liner and does not come in contact with the boxmaker's glue, laminated moisture-proof boards can be readily glued.

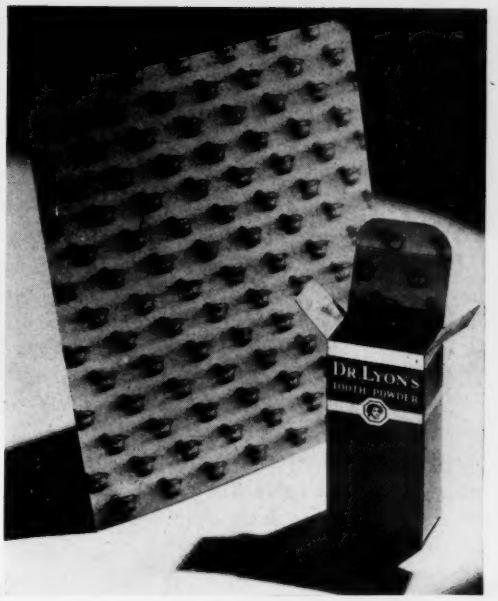
A good moisture-proof bakery board will transmit not more than 10 Mg. of water through 100 Cm^2 of board per hour at 80° F. and 45 per cent R.H. Such a board will keep a cake fresh and moist for four or six days or longer, in dry weather. To be assured of a cake which retains its bakery freshness is increasingly appreciated by every hostess.

Frozen foods require a moisture-proof container. So far most frozen food packages, however, get their moisture-resistance from the translucent or transparent moisture-proof outer wrap. The combination of a good parchment, combined to suitable board with a moisture-

XUM



1



2

1. "Safety" tag board with patented markings forming an integral part of the board are used to identify products as genuine and to prevent counterfeiting. Photo courtesy George LaMonte & Son. **2.** Both liquor and drug manufacturers, among others, frequently utilize counterfeit-proofed carton-boards marked with trade marks or other identifying patterns. Photo courtesy of American Coating Mills, Inc.

proof laminating material, makes an almost perfect carton material for most frozen foods.

Water-resistant boards: Boards are available that will hold water indefinitely, suitable for milk containers, oyster and ice cream boxes. This characteristic is obtainable by beater sizing with wax and rosin and by coating with waxes or resins. A good water-resistant board will absorb only 100 Mg. of water on 100 Cm^2 in 18 hours. Fair resistance is denoted if the absorption is only 500 Mg. in that period.

Water-shedding boards: For florist boxes and other places where small quantities of water are involved, sufficient water-resistance is obtained by treating the surface so that the water drops run off "like water off a duck's back." A proper calender treatment will give this temporary water-proof effect.

Anti-tarnish boards: To be safe for packaging of delicate metal surfaces, such as silver or fine machine tools, the paper surface should contain not more than .001 per cent of free sulphur. Ragstock was formerly used for this purpose. Now boards made from well washed sulphite will meet this requirement. Kraft liners, special beater treatments and special coatings are available further to insure anti-tarnish qualities.

Grease-proof boards: In food packaging, grease-proof qualities are often essential. To be grease-proof enough to hold oil or butter indefinitely, a sheet must not absorb more than 20 Mg. of kerosene on 100 Cm^2 of board in 18 hours.

The chief difficulty in obtaining the desired degree of grease-resistance lies in making the resistant film flexible enough to fold. This is particularly true for grease-proof coatings, which are obtained by the use of casein, glue, gelatin, lacquers, waxes and resins. While it is relatively simple to plasticize the surface sufficiently in the flat, the coating seldom remains perfect in the fold.

The problem of grease-proof containers may be solved by laminating a good grade of grease-proof, glassine or parchment paper to boxboard, using a flexible adhesive. This combined sheet makes a very attractive box material and gives that impression of a clean and sanitary package which a housewife associates with grease-proof, glassine or parchment papers.

The really de luxe material for greasy, perishable foods is a combined sheet in which a flexible, moisture-proof film is used as the laminating agent. With a good grease-resistant liner, these cartons will show no greasy stain and the moisture-resistant film will keep the contents as fresh as the day they were manufactured.

Definitions and Trade Terms

The following definitions, as established by the National Paperboard Association, apply to set-up and folding boxboards. For nomenclature of boards used for corrugated and solid fibre containers (shipping cases) see Section 12, "Corrugated and Solid Fibre Containers."

Standard Sizes: The standard size of all grades is 25 by 40 in., containing 1000 sq. in. Patent Coated or Manila Boards are also made in sizes 24 by 36 in., containing 864 sq. in., and 28 by 44 in., containing 1232 sq. in. The standard sizes are used as bases for all computations.

Standard Package: A standard package of Patent Coated or Solid Manila Board is a ream of 500 sheets. These grades are sometimes packed, for convenience, in fractions or multiples of a ream, depending upon the size of the sheet.

Bundle: A bundle is a unit containing 50 lbs. The quantity of sheets varies with the size and the caliper but the weight of 50 lbs. is always fixed.

Regular Numbers: The number or regular number is the quantity of standard sized sheets (25 by 40) of boxboard required to make a bundle of 50 lbs.

Count: The count is the quantity of odd-sized sheets required to make a bundle. If sheets are standard

size (25 by 40) the count is identical with the Regular Number; therefore, it has become the custom to use the term "count" to apply only to odd-sized sheets, and "Regular Number" to standard size.

The area in square inches of the board in a bundle of a Regular Number is the number multiplied by 1000 (25 by 40). The square inch area of an odd-sized sheet is the width multiplied by the length, and by dividing this figure into the area of the corresponding Regular Number the count for the odd-sized sheet is found.

Caliper: Caliper is the thickness of board expressed in $^1/_{1000}$ of an inch and written as a decimal of an inch. A "Point" is one such part of an inch.

Finish: There are four standard finishes designated by numbers 1 to 4. The degree of finish is regulated by the pressure exerted on the calenders under which the board passes. The pressure determines the density of the sheet. The resulting surface is incidental, but gains in smoothness as calender pressure is increased.

No. 1—Light pressure, resulting in a rough surface and low density. It gives large sheetage for its weight, i.e., it has most area per pound of board.

No. 2—Medium pressure with fair surface and sheetage. Popular for ordinary printing and general utility.

No. 3—Heavy pressure with smooth surface and low sheetage. Used where better printing surface is needed.

No. 4—Heaviest pressure with extra smooth and slick surface, dense body, and firmly compacted fibres. It has the lowest sheetage.

Rough—Smooth—Where but two finishes are used the relative terms "Rough" or "Smooth" designate light or heavy weight board per caliper point.

Dimensions: In stating the dimensions of a sheet the width in inches is given first and the length last. Width is the measurement across the machine; i.e., space between slitter-knives. Length is always the measurement in the direction of the grain; i.e., space between knife cut-off.

Bending: A board is considered a "bender" if, when properly creased and folded, no break in the outer fibres is found.

Under non-bending (set-up box) board are included the following: Plain Strawboard, Plain Chipboard, Filled Wood Pulp, Filled News Board, News Vat-lined Chip, Single White Vat-lined Chip.

Under bending (folding box) board are included the following: Single Manila Lined Chip, Bleached Manila Lined Chip, Double Manila Lined Chip, Colored Boxboard Chip Back, Bending Chipboard, Colored Suit-box Chip Back, Mist Color Suit-box Chip Back, Crackershell Board, Solid Jute; any combination with Chip, News, or Pulp Back.

Under patent coated board are included the following: Patent Coated Solid Manila Back, Patent Coated News Back, Patent Coated News Center, Manila Back Patent Coated, Chip Back Patent Coated, Blue or Color Back Board.

Clay-coated board is considered as a variety of bending boxboard. For further details see paragraph on clay-coated folding boxboard under the subheading "Varieties of Boxboard."

Board manufacturers maintain facilities for determining the limitations and properties of their products, and it is recommended to users of both set-up and folding boxes that they make use of this experience and knowledge when planning redesigns of their packages.

Folding and Display Cartons

by ARTHUR WEISS*

Specifying Stock: The universal method of specifying the weight of folding boxboards is on the point system, one point equalling one one-thousandth of an inch of thickness of the board. For example, the most widely used stock for small and medium sized cartons is sixteen thousandths of an inch in thickness, which is shown as .016. The range in folding boxboard weights is pretty definitely confined between .016 and .040 points, unless special requirements make it necessary to use a lighter or heavier board.

Specifying Style: As will be readily appreciated by simply looking through the following pages, folding cartons and display containers are made in an infinite variety of styles. Not every style is made by any one company, although none is such that it could not be, if it were not for patents that reserve their use to the patentees. Actually, all are comparatively simple in construction, requiring little in the way of complicated machinery to produce. In so far as possible the cartons and displays thus protected are so stipulated in the descriptive information given. It is suggested that manufacturers who seek to have one particular style supplied them make sure that their carton maker determines whether or not patents exist on that style. This information is well known by carton manufacturers who keep up with all improvements.

With the exception of the most universally used cartons and display containers, no standardization exists in the exact names for the different styles. In so far as possible, in the following descriptions, the particular style given is that in most common usage, although variations will occur with various carton manufacturers, although the basis remains the same.

Specifying Dimensions: Due to the lack of uniformity or standard method of specifying the dimensions

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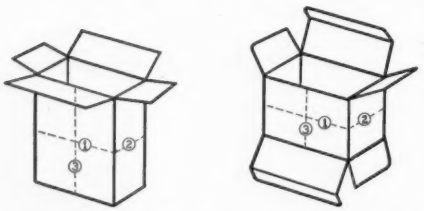
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of a folding carton, causing frequent misunderstandings and errors in the industry, the Paperboard Industries Association adopted a simplified standard for stating the three dimensions of a folding carton.

Shown below are diagrams indicating, by number, the sequence in which specifications are to be presented. Thus, in the case of either carton or counter-display container, the following will apply:

1. The larger dimension at the opening.
2. The smaller dimension at the opening.
3. The third remaining dimension.

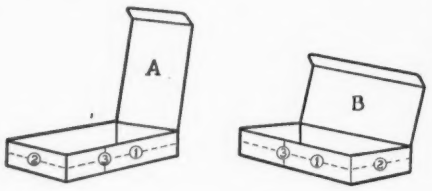
LEFT: SEAL (GLUED) END CARTON
RIGHT: REVERSE TUCK CARTON



All measurements are understood to be from center of crease to center of crease.

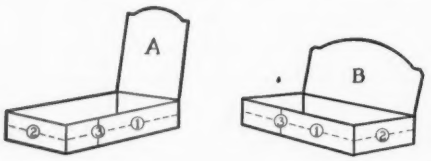
ONE-PIECE BOXES WITH COVERS

State whether or not cover extends from first or second dimension. (That is, whether like A or B.)



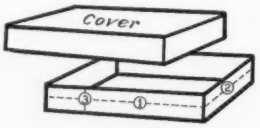
DISPLAY CONTAINERS

State whether or not display panel extends from first or second dimension. (That is, whether like A or B.)



TWO-PIECE TELESCOPE BOX

In two-piece boxes dimensions of bottoms are given



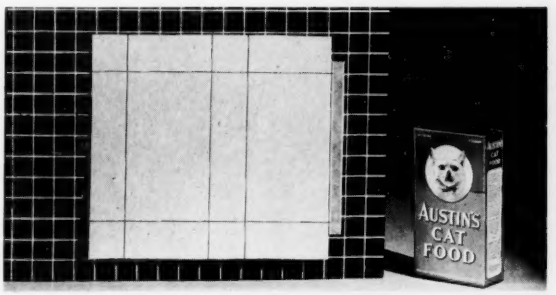
Adherence to this rule will greatly facilitate understanding and tend to make a uniform system.

The following pages illustrate the major types of folding carton and folding display container constructions. Although infinite variations in style and proportions are possible, the reader will find here the basic elements of every major type in use today.

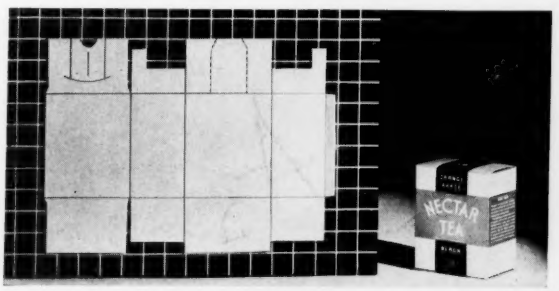
Illustrations consist of two elements. The right hand portion of each photograph shows a printed and assembled package, exactly as it would appear in the store. The left hand portion of each illustration presents a photo-diagram of the same package in the flat and unprinted, showing its construction and proportions. Solid straight lines indicate scoring edges; dotted lines indicate perforations or scores intended for tearing or opening of the container; cross hatching indicates glue seams.

The diagrams are photographed against a one-inch scale and the reader may thus compute the quantity of board required for the entire container, or any portion thereof, as well as the dimensions of the container itself when erected. Comparison may also be made by this method of various styles and of the relative quantities of board required by each.

It should be remembered, in figuring relative board requirements that cartons are usually die-cut and printed in multiple on large sheets and that the manner in which the cartons are laid out upon the sheet will determine the amount of waste and, hence, the average amount of board required per carton.



1. SEAL END CARTON. The most popular style carton for packing flour, cereals, sugar, salt, teas, coffees, spices, soap powders and a wide variety of products. Readily packed on high speed automatic machinery but difficult to seal by hand.



2. SEAL END CARTON WITH POURING SPOUT. Seal end carton, same construction as No. 1 with the additional feature of the patented pouring spout. This pouring spout makes it possible to dispense contents easily without spilling and affords a means of re-closing.







Smart New FIBRE *and* TRANSPARENT Packages

1. SPARKLING TRANSPARENT PACKAGES

Glistening, crystal-clear acetate sales-containers by Cleveland Container lead the field in ingenuity, beauty, and economy of construction. We've produced thousands of such transparent and "window" containers for every industry—and in almost every imaginable shape and size. Tell us your desires—and we'll gladly offer suggestions—without obligation.

2. NEW LOW COST FIBRE DRUMS

Here are the new containers you've been awaiting! They're lightweight, tough and strong. Snug fitting lids come off and on at will.

Yet costs are exceedingly low!

You cannot get thriftier or better paper packages. They come in plain chip, manila-lined or solid manila, and may be paraffin coated or fitted with "Cellophane" or "Pliofilm" pouches. Our specialties include various sizes of fibre cans, cores and tubes.

3. NEW CELLOPHANE-LINED FIBRE CANS

Here's new protection to moist, oily, volatile, dry, aromatic or anhydrous contents—*at great savings* over other containers! These new "Cleveco" fibre cans offer lintproof, odorproof, tasteproof and, if desired, moistureproof walls against contamination of foods, dry dessert mixtures, drugs, chemicals, confections and tobacco. *Brilliant colors of the laminated lining* contrast with the color of your product—dramatizing its quality and purity. *Ideal for Sales-Packages and as Mailing Tubes for samples!*

FLASH! *Announcing*

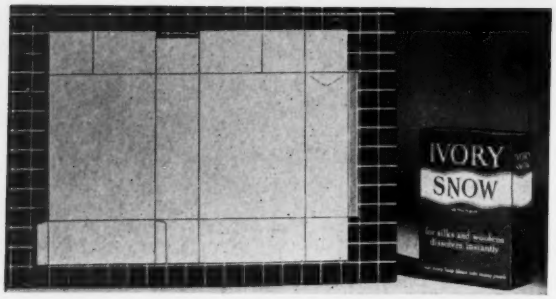
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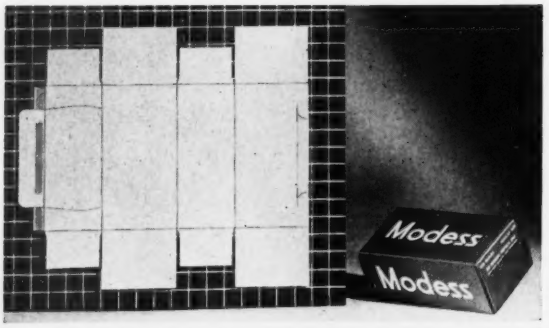
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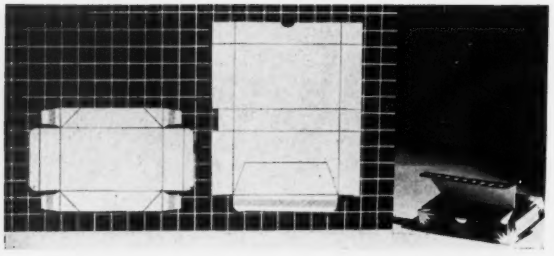
3

3. SEAL END CARTON for automatic packing and sealing. It is similar to No. 1 except that it has incorporated in its construction additional flaps on the bottom of the carton to prevent sifting. This carton is particularly suited for products which are milled or pulverized to such a degree that particles would sift through the regular seal end carton. This carton also has a unique pouring spout, which is formed by breaking the perforations in the top of the side panel. This is a patented type of carton.



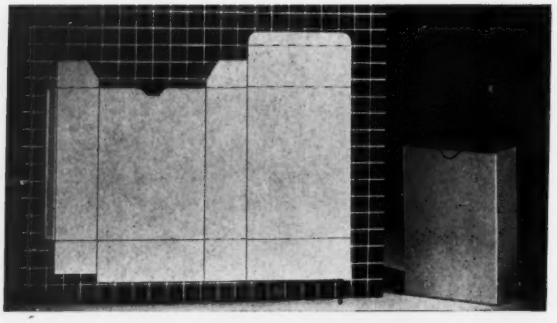
4

4. SEAL END BROADSIDE OPENER STYLE. An interesting development in a seal end carton which permits inexpensive, automatic filling through the ends of the carton which are later securely sealed. Carton is opened on the broad side, hence the name "Broadside Opener." Patented.



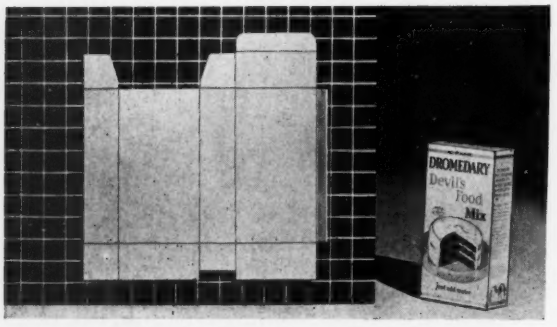
5

5. TWO-PIECE BROADSIDE OPENER. This is a variation of style No. 4 and is primarily used for the packaging of small pieces such as cube sugar. The individual pieces are first packed into the tray which is then easily inserted through the end of the outer carton. The outer carton is sealed automatically. The consumer can readily open the carton by breaking the spotted glue seam and tearing perforations. The container can be re-closed by the consumer by treating the hinged opening as an ordinary tuck flap. This is a patented type of carton construction.



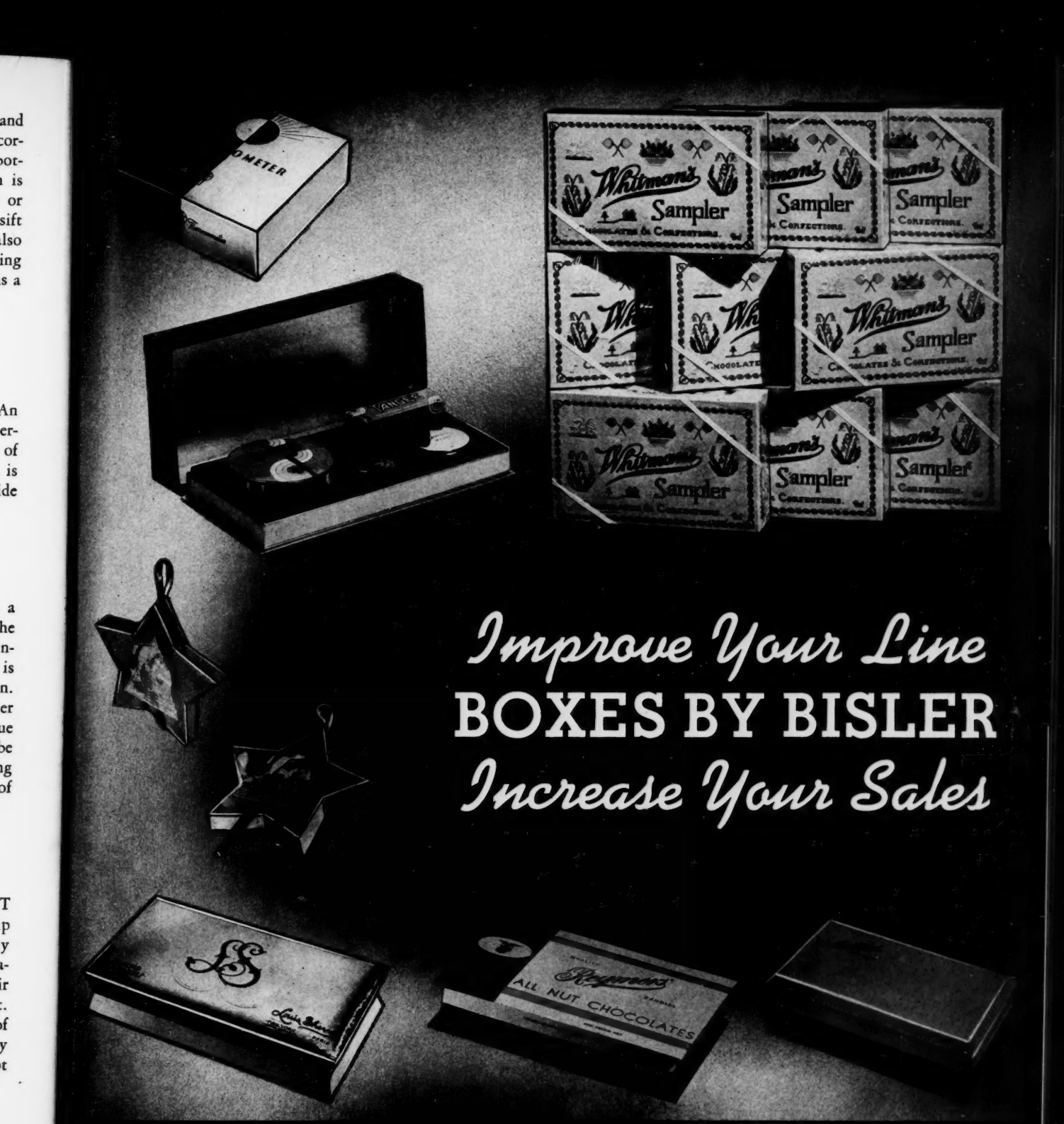
6

6. TUCK TOP SEAL BOTTOM SHELL WITH TIGHT WRAP. Consists of a plain shell, often made of chip board, completely covered by a printed wrapper. Widely used for cereals and crackers. Requires automatic machine equipment. Outer wrapper prevents sifting, air deterioration and contamination from insects or dust. Newest development is to paraffin the printed side of wrap to give added protection to product. Wrap may be glued solidly to all six surfaces of the carton, or "spot glued" at certain points.



7

7. TUCK TOP, SEAL BOTTOM. Has the advantage of a solidly sealed bottom and convenience of the easily opened and closed tuck top, for ready accessibility to contents. Best suited to automatic packing because of difficulty of sealing bottom by hand. Note essential similarity to No. 6 with the exception of the use of printing directly on the carton blank.



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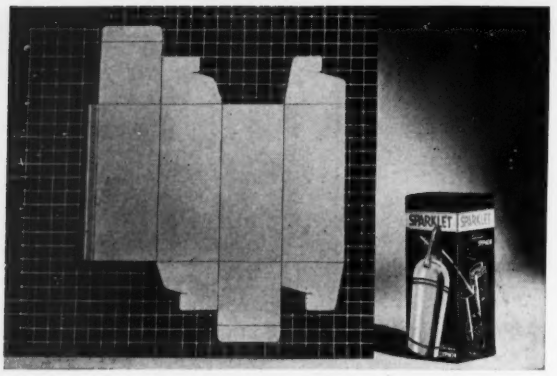
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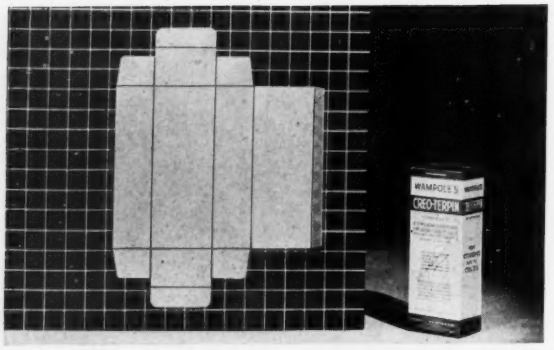
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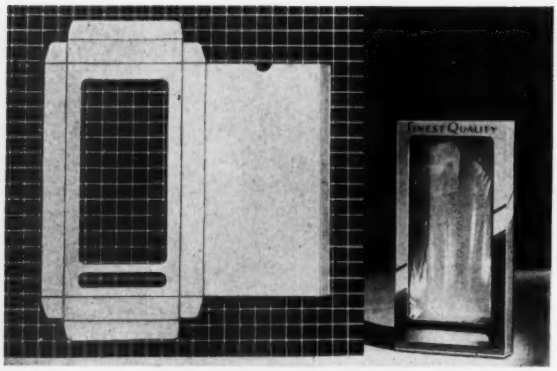
8-9

8. REVERSE TUCK CARTON. The most widely used of all carton styles for low-priced articles of all kinds. Easily set up by hand and adaptable to automatic packing. Convenient to open and close and exceedingly economical in manufacture because cartons interlock. This style not suited for heavy products, which must be held securely in the carton and require some positive means of locking the end tucks, or for powdery products, such as flour, salt and sugar, which are likely to sift through and thus require a seal end carton. Ready accessibility and low cost make this style carton ideal for five- and ten-cent units of candy such as cough drops, shaving creams and tooth paste in tubes. Type illustrated has special locking side flaps. See description No. 9 below.



10

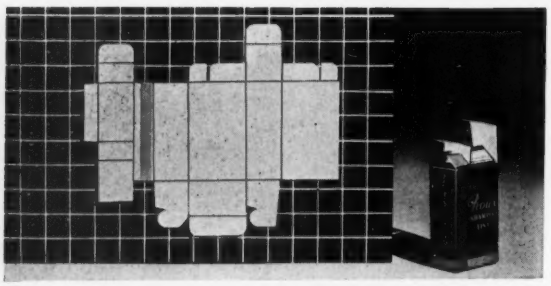
9. REVERSE TUCK CARTON WITH ARTHUR LOCKS. Side flaps, top and bottom, or just the bottom, lock to prevent heavy contents from breaking through. Used principally for packing jars and bottles containing toilet preparations, medicines and condiments, which must be held securely in the carton.



11

10. STRAIGHT TUCK CARTON. This carton has no advantage over reverse tuck carton, but is required and extensively used with high speed automatic cartoning machines. Must be made with right and left glue seams to secure economy of interlocking for economical manufacturing. Serves as an effective and satisfactory low price package for the same large variety of products using the regular reverse tuck carton. When used for products packaged in glass bottles, it is advisable to equip the bottom flaps with a positive locking device to insure against the possibility of the bottle falling out of the carton. Inserts or corrugated liner may be used for added protection of the product.

11. STRAIGHT TUCK CARTON WITH TRANSPARENT CELLULOSE WINDOW. Contents of this package fully protected from soilage yet visible to consumer through transparent window.



12

12. STRAIGHT TUCK CARTON, "2 in 1" STYLE. Patented carton made with an inside divider which, when folded into position, forms two separate compartments. Made in one piece, delivered in conventional knocked-down form. An ideal carton for a combination sale, such as a shampoo and a hair tint, or a bottle with medicine dropper or dispensing unit.

XUM

Bothered with a TOUGH Carton Problem?

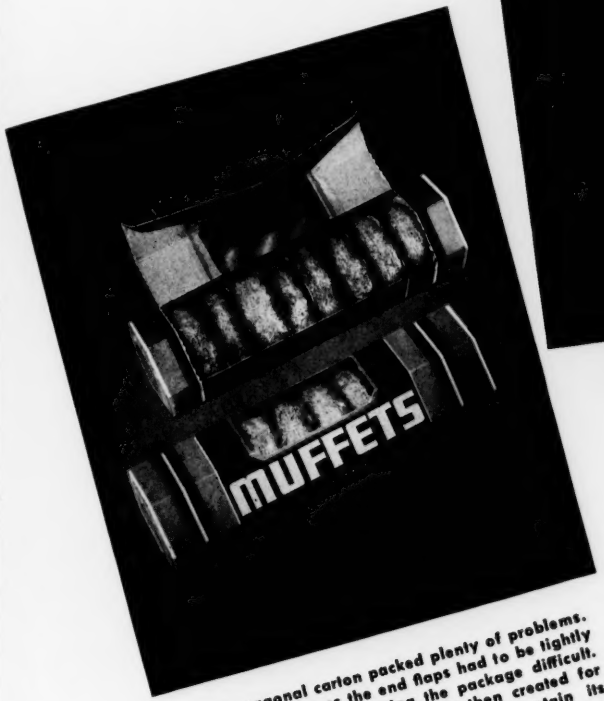


Customer specified Perk must have the maximum in display and protection—boxboard must be tough yet sparkling white, colors brilliant having the sheen of a high varnish. This problem was effectively solved with Michcote boxboard and special high gloss inks.





"We want a gift package that is new and totally different—something that assembles quickly, packs easily, and protects contents," said Westons Ltd. How well this big order was carried out is shown above. Incidentally this package won the 1938 All-America Packaging Award.



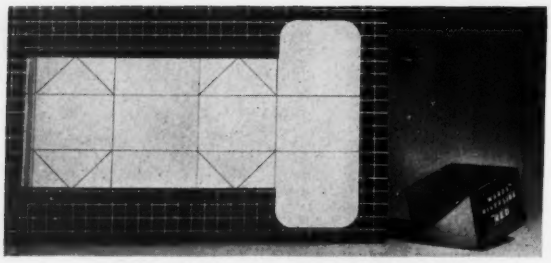
This hexagonal carton packed plenty of problems. To insure freshness the end flaps had to be tightly sealed. This made opening the package difficult. The patented side opening was then created for consumer convenience. Muffets must retain its novel shape through transit, handling, and in mass displays. Client is pleased with the way this MICHIGAN CARTON keeps its trim appearance, its contents fresh and intact.

These tough babies were tamed with Michigan Cartons

Why not bring us your tough packaging problems? You will be surprised at our sound thorough approach to each problem, and more than pleased when you see how economically and successfully MICHIGAN CARTONS can tame these problems. Why wait? Drop us a line today.

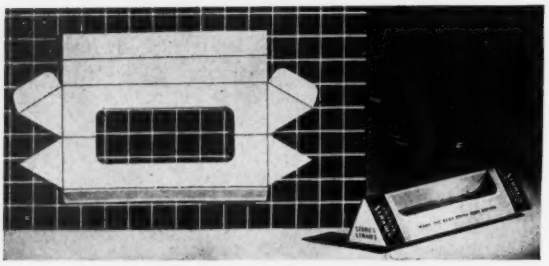
MICHIGAN CARTON CO.
BATTLE CREEK, MICHIGAN

XUM



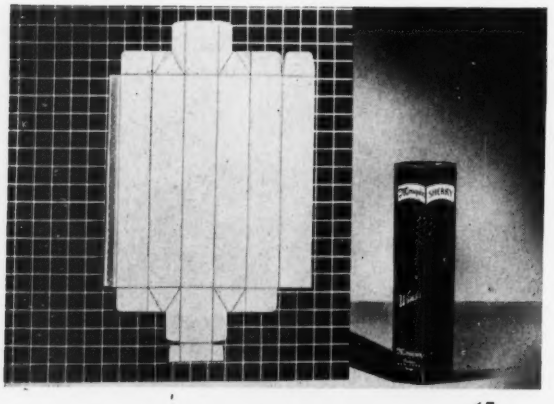
13

13. BELLOWS-END CARTON. Web end construction forms a strong and tight end closure by hand assembly. Carton may be opened and tightly re-closed at will. Note simplicity of construction. Web end construction provides substantial protection against sifting when granular or crumbling products are packed in this type of carton.



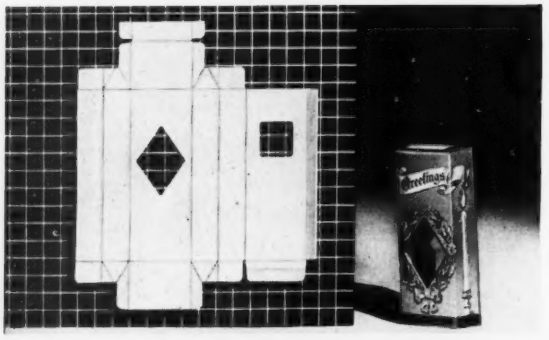
14

14. TRIANGULAR STRAIGHT TUCK. This novel shape carton is easily assembled and filled by hand. Its shape and location of transparent window makes an unusual display of contents. In packing, alternate layers of cartons are reversed so that window portions are protected by the side walls of the cartons they rest upon. Note how rear wall (i.e., wall immediately opposite die-cut window) is scored to permit the pasted carton to be shipped flat.



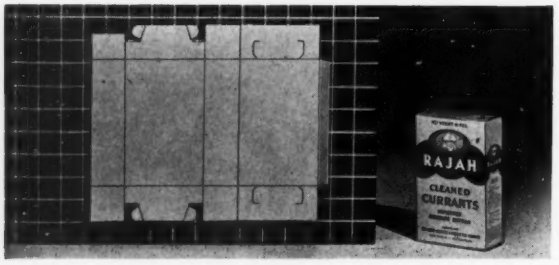
15

15. HEXAGONAL CARTON, TUCK TOP AND LOCK BOTTOM. A patented carton that combines novelty with ease and speed of setting up. Quick-closing top requires only a single tuck or flap, while the Hibson lock bottom insures a permanent seal. Capable of holding the weight of a comparatively heavy inner package, such as a wine bottle, liqueur bottle or other product packed in glass. Types of this sort are extensively used for display purposes and as seasonal promotional cartons for products ordinarily merchandised in their glass containers alone.



16

16. RECTANGULAR CARTON, TUCK TOP AND LOCK BOTTOM. Same as Style No. 15 except that it can be made for flat or rectangular shaped products. The diamond shape and the rectangular die-cut walls found on the front and back faces of the unit here shown are designed to permit the display of labels on the inner container to meet merchandising or legal requirements. This is a patented type.

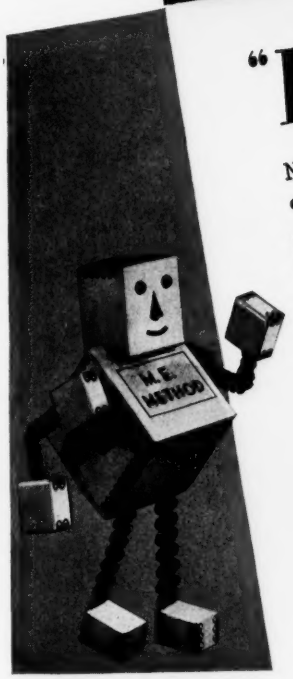


17

17. GREENLEAF LOCK CARTON. Locks at each end securely. Widely used for packing dried fruits and other heavy bulky products. Also serves as a packer or carrier unit for a number of individual cartons. Locks of this type provide sufficient strength to support a comparatively great inner package weight, yet are so constructed as to permit of fairly frequent opening and re-closing by the consumer.

XUM





"Information, Please"

No one can claim to be really "up" on paper boxes if he has only a sketchy knowledge of Metal Edge — the *strongest paper box* and the *packaging method.*

Metal Edge is one of the most vital . . . dynamic . . . forces in packaging today. The list of concerns — large and small — using it, in almost every industry you can mention, reads like a roll-call of America's outstanding merchandisers. Introduced more than 50 years ago, its advantages are more appreciated each passing day in these fast-moving times.

Forceful counter display packages . . . overall printed, full-telescope boxes . . . pharmaceuticals . . . dispensers . . . mailers . . . all in a wide range of sizes and styles. By the Metal Edge method you have the strongest paper boxes *when* and *where* you need them . . . save time, space, labor, money.

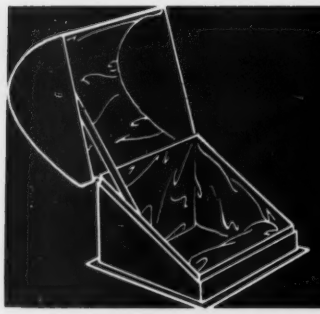
Just write "Information, Please" on your business letterhead and we'll send you the complete story.

National Metal Edge Box Co.

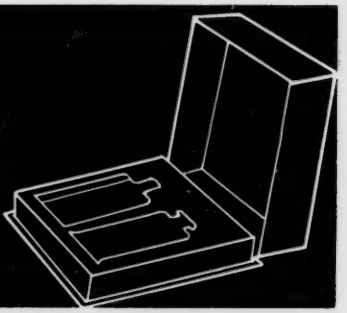
330 North 12th St., Philadelphia

Strongest Paper Box

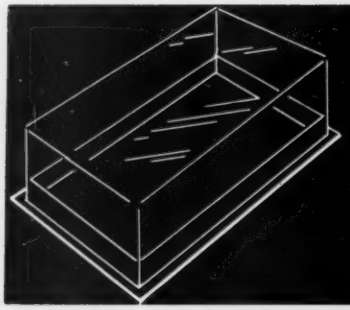
SINCE 1887



Set-Up hinged cover boxes, in regular or odd shapes. Fabric lined in colors, or with fancy paper covered platforms, movable or immovable.

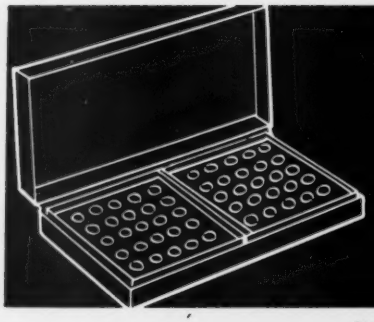


WARNERCRAFT PACKAGING

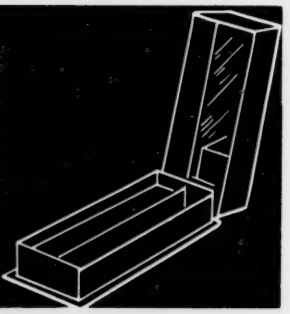


Transparent boxes of many shapes or sizes, with opaque board or transparent base. Precisely finished to best display merchandise in dust-proof substantial packages.

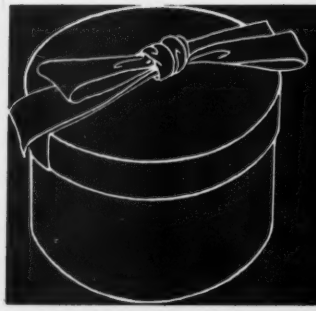
WARNERCRAFT PACKAGING



Interior platforms die-cut to exactly fit a product. Covers strong enough for extra display, such as attached mirrors.

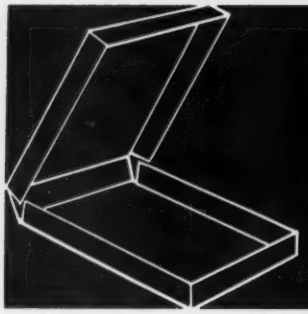


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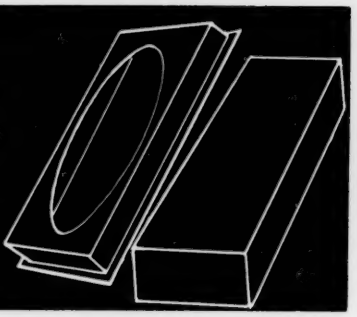


Round, octagonal or other specially shaped boxes may be had, with decorative features of many kinds, from ribbons to multicolored printing or fancy papers.

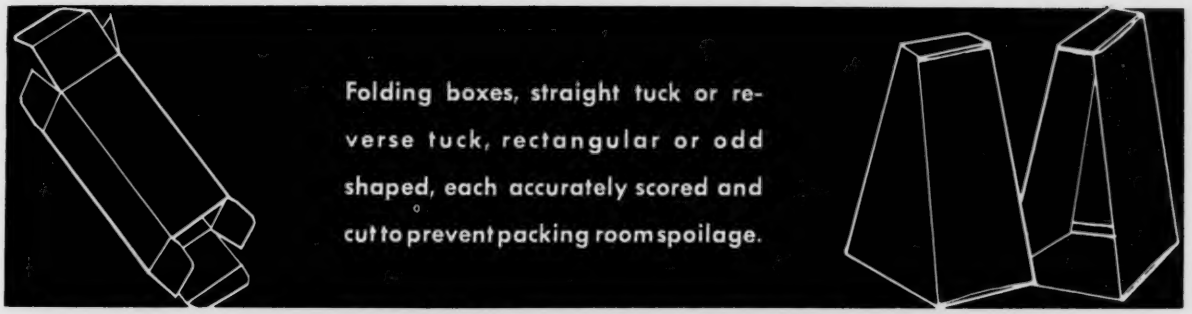
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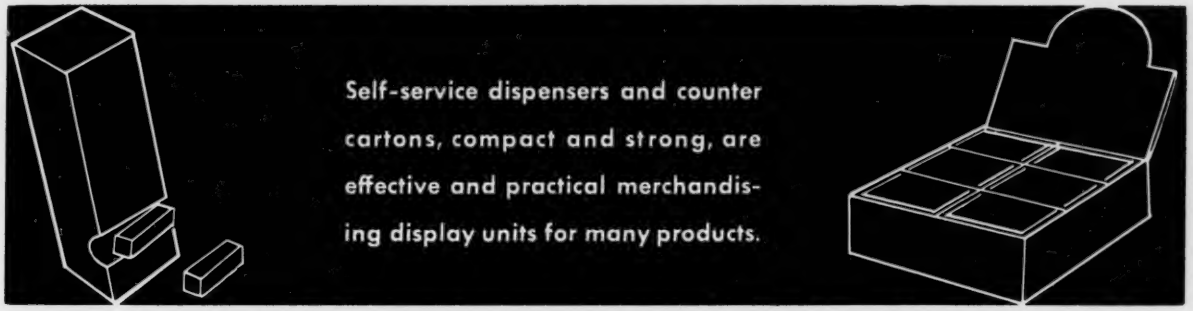
Covers for Set-Up boxes vary to suit the product. There is the one-piece self cover construction, for example, hinged covers, or lift-off.



XUM

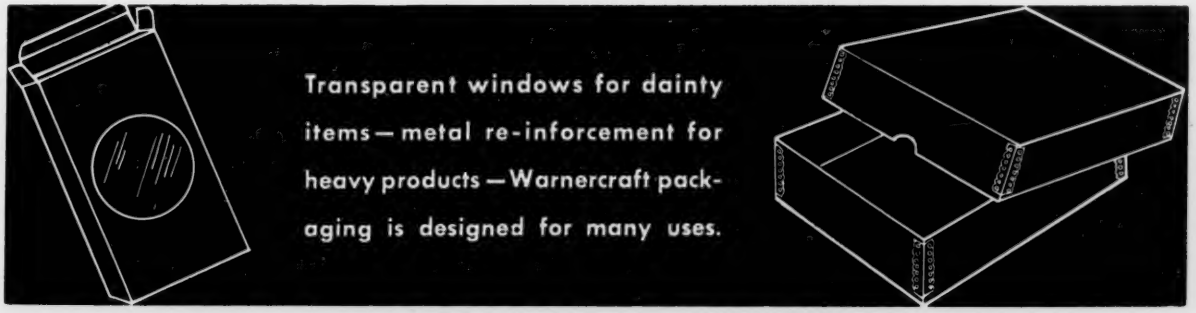


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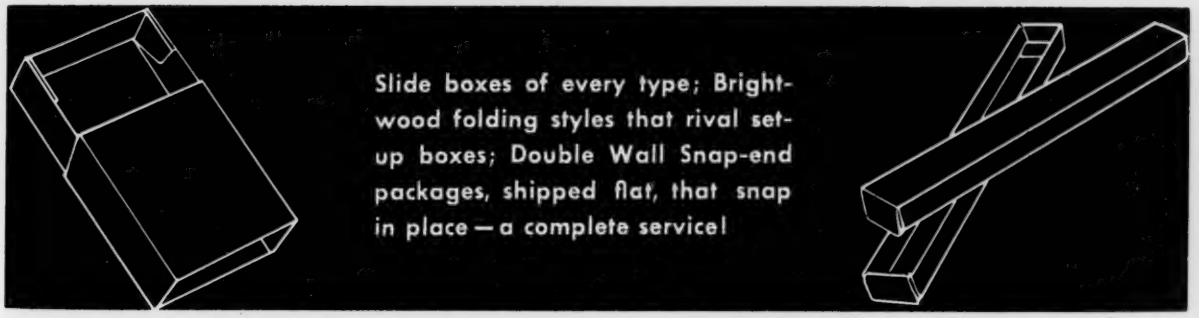


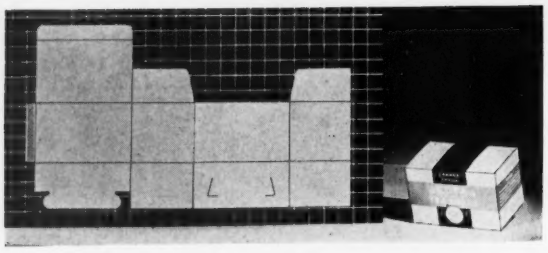
"Warnercraft" is a complete cardboard packaging service. A full time staff of experienced designers, a trained personnel and modern equipment enable us to adapt practical, economical and quality box construction to specific requirements. On these pages are shown a few of the many types of "Warnercraft" packaging. Whether your product requires a simple folding box or an exquisite hand-made container, we feel that we are qualified to intelligently respond to your requirements.

THE WARNER BROTHERS COMPANY, Bridgeport, Connecticut
200 Madison Avenue, New York, N. Y. • AShland 4-1195



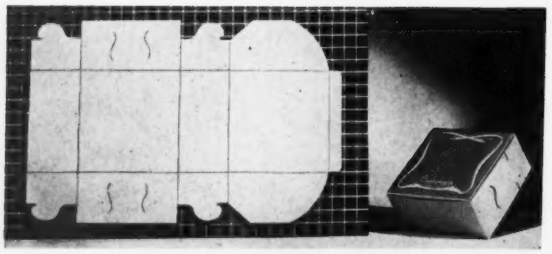
WARNERCRAFT PACKAGING





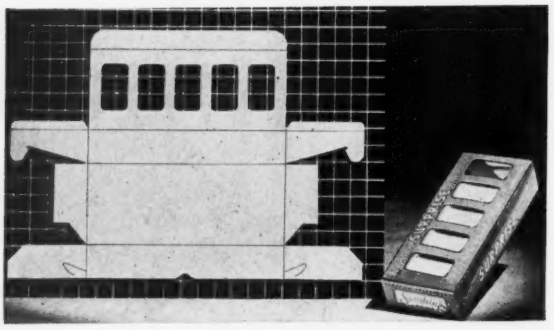
18

18. TUCK TOP CARTON WITH GREENLEAF BOTTOM. Combines the ease of closing a regular tuck top with the safety of a securely locked bottom, to prevent possibility of heavy contents falling out of carton. Quickly closed by hand. Use of the special lock bottom adds slightly to carton cost but is often found desirable for heavy products.



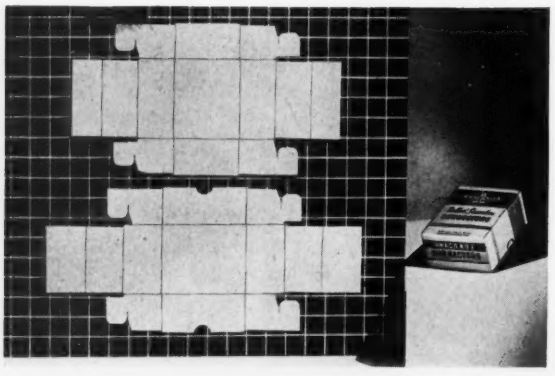
19

19. ONE-PIECE CARTON WITH FOUR HOOK CATCHES. An economical carton for local bakery use where small quantities of several sizes are required. Two catches on each end holds the carton upright. This style is not sufficiently durable to stand long distance transportation or rough handling, but is used by bakeries for packaging cake sold in their own retail stores and carried home by consumers. Also used on routes for delivery-trucks-to-consumer purchases in which case it is frequently made with a window of transparent cellulose.



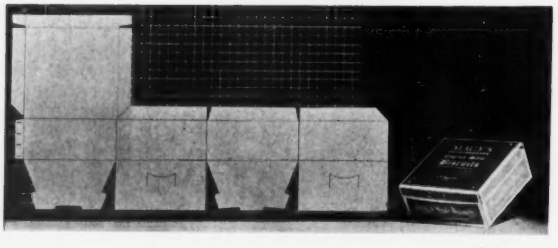
20

20. PETERS LOCK CARTON. Derives its name from Peters' machines which are used for automatic forming and lining. Widely used for biscuits, crackers, lard and shortenings and adaptable to wide variety of large volume products. The multiple window cut-outs in the assembly here shown are designed to provide a high degree of visibility for the assorted items packed in this unit while, at the same time, maintaining the strength and rigidity of the carton-board. A single strip of transparent material would be utilized to form all five windows with a single applying operation.



21

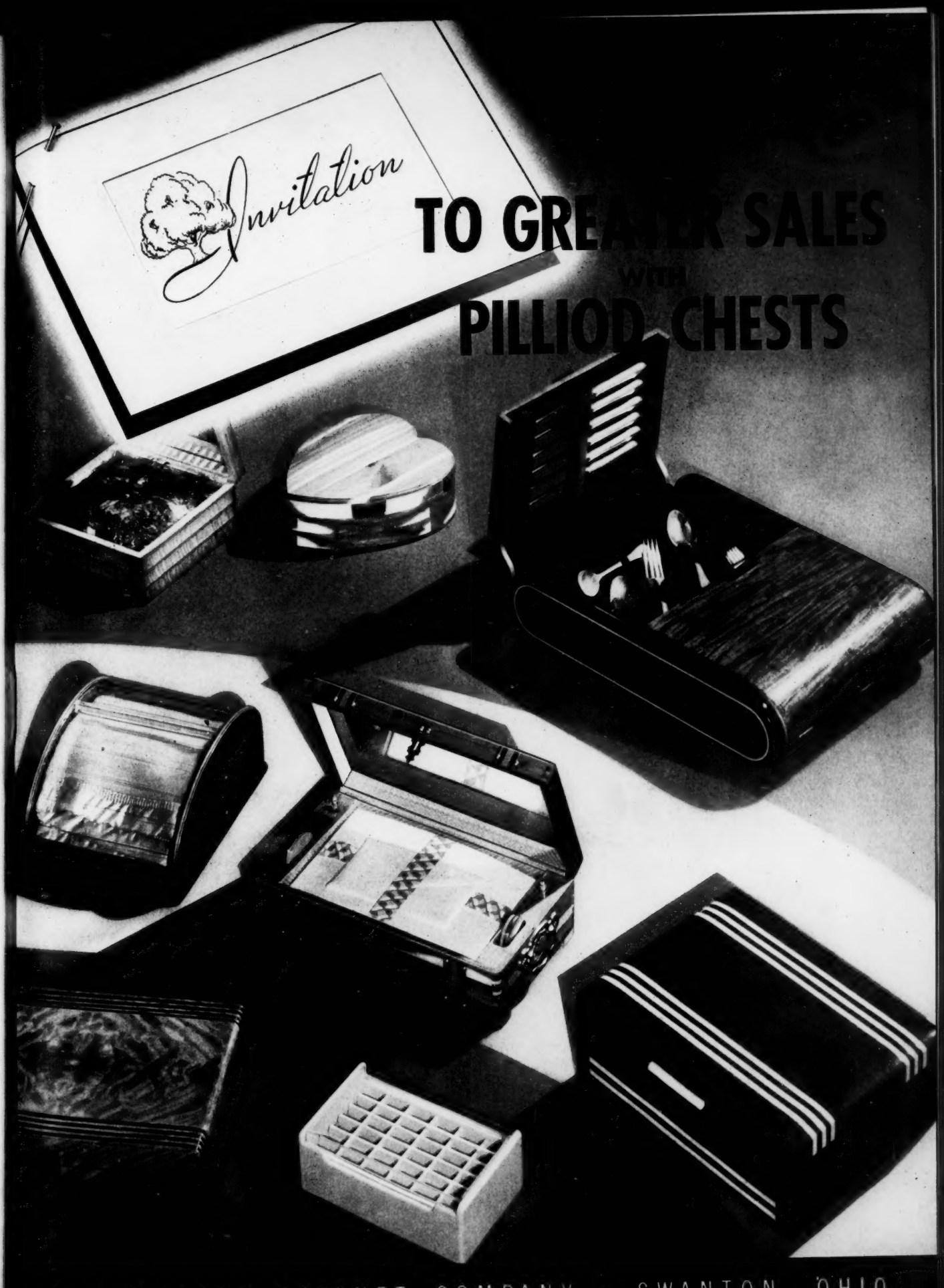
21. TWO-PIECE TELESCOPE CARTON WITH OVERLAPPING ENDS. This style carton assembled and folded by hand. Ends overlap and are held against the side by friction, but may be glued for additional reinforcement. A development of the overlapping end carton is an extra length tab provided as an additional protection on the top and bottom. A similar reinforcement along the sides can be provided for strength.



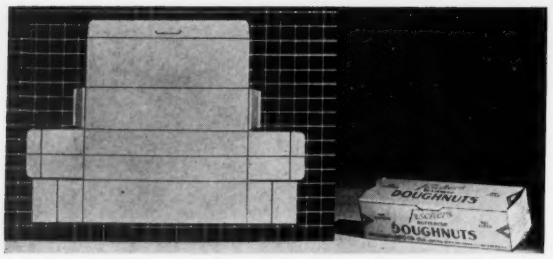
22

22. QUIKLOC STYLE CRACKER CADDY. Originally a caddy was a container for bulk goods which were dispensed in small units. Illustration shows one holding several pounds of crackers which is bought by many consumers. One-piece collapsible construction with patented bottom which is quickly set up. Two corners of cover require metal stitching by user. Note how the construction of the bottom flaps provides a multi-layer bottom when the caddy is erected.

XUM

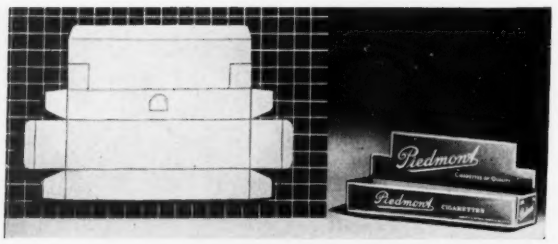

Invitation
TO GREATER SALES
WITH
PILLIOD CHESTS
THE PILLIOD CABINET COMPANY • SWANTON, OHIO

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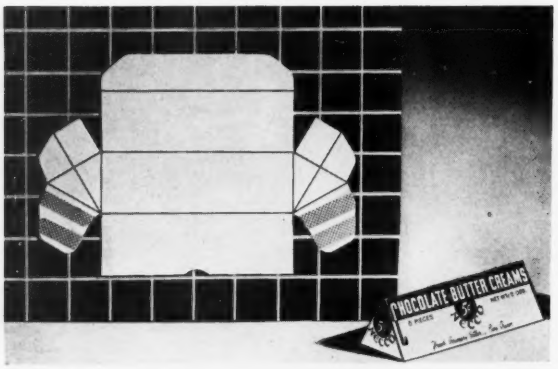
23

23. ONE-PIECE COLLAPSIBLE CARTON. A simple one-piece container serving as a carrier especially useful where quick set-up and low cost are factors. Used for bakery goods, cigarettes and many other products. Shipped to user in knocked-down form, so that it occupies a minimum of storage space. Note cross hatch glue seam indications. These tabs adhere to the outer ends of the bottom-most tabs. The intervening wall forming the bottom of the container is scored to fold in half, lengthwise, when shipped. This is snapped into erect position and given required rigidity by turning up the side wall tabs.



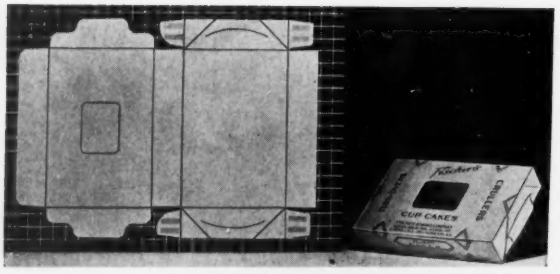
24

24. ONE-PIECE BRIGHTWOOD STYLE CARTON. A widely used one-piece carton for large scale production. Automatically formed, glued along the vertical panels, filled and sealed by Brightwood machines in the package user's plant. Definite economies in packaging can be effected by the use of this style carton if sufficient production is regularly handled to justify the use of this automatic equipment.



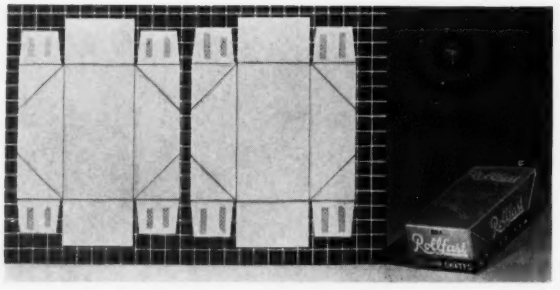
25

25. TRIANGULAR CARTON. This carton is received in a glued knock-down form. It is easily assembled for filling by pushing the ends inwardly. After filling, the carton is closed by tucking in the top panel. Its novel shape adds display value to the individual carton. Note score lines on side walls. The folding of these walls permits shipment of the pre-glued carton in the flat.



26

26. ONE-PIECE COLLAPSIBLE CARTON. A quickly set-up carton, made with tongues on the cover which tuck into slots on the sides, making this style especially well suited for bakery goods and similar products. Furnished with transparent cellulose window to allow view of product without opening carton, which is a most important factor in keeping food products fresh and avoiding spoilage from exposure to dust, dirt, flies or frequent handling prior to sale. Is sometimes used with an inner band or liner, placed around a cake, the carton being made sufficiently high to prevent the cover coming into contact with the frosting.



27

27. TWO-PIECE FULL TELESCOPE CARTON. These cartons are glued in collapsible form by carton manufacturer and shipped to user in that manner. Quickly set up by infolding to an upright position. Note that top half of container is slightly larger in all dimensions than lower or bottom half. This permits of telescoping without distortion of the container. Size, in such instances, must be accurately controlled to provide a tight—but not too tight—fit.

XUM

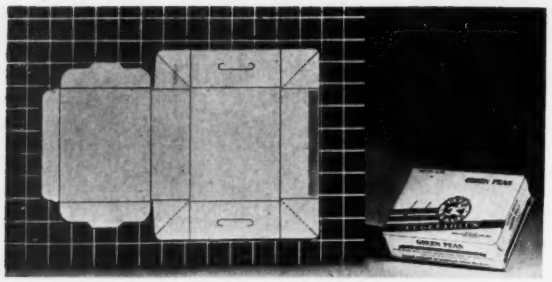


Out of 75 Years of PROFITABLE PACKAGING

Come Stories with a Moral for Sellers and Shippers

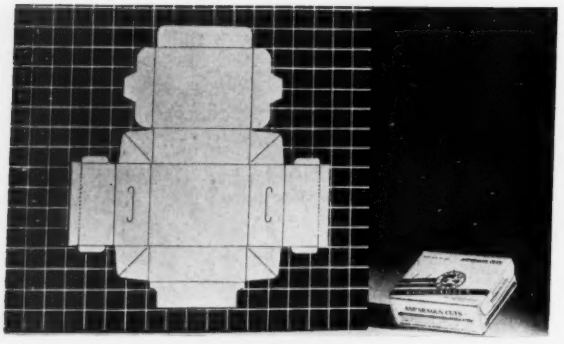
We've always refused to look upon packaging as a necessary expense...to us it's seemed a constant opportunity to make a profit—in reduced shipping costs, in lessened storage space, in lower opening expense, in enhanced sales appeal... Whether you sell or ship, whether your business is tooth picks or tables, tabasco or terra cotta, you'll find we can save you time and trouble, headaches and probably money if you "Go to Gair" for your next packaging job.

ROBERT GAIR COMPANY, INC., 155 EAST 44 STREET, NEW YORK, N. Y.



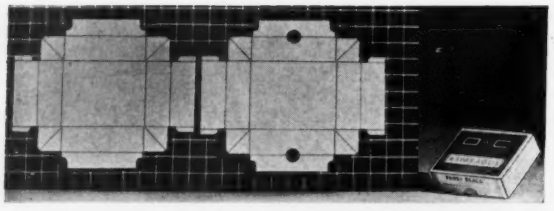
28

28. ONE-PIECE WEBB ENDS AND SNAP LOCKS. This carton, delivered in glue tube fashion, is easily and quickly assembled. The carton shown was primarily developed for frosted foods, which require tight end closures and ease and speed in packing. It is well suited for various other types of products which require features mentioned above plus economy. Patented.



29

29. ONE-PIECE SIMPLEX STYLE CARTON. Combines rigidity, finish and strength of set-up box and economy in cost, shipping and storage of a carton. Quickly set up without machinery. Made in all sizes from small candy boxes to large containers for blankets. One-side printing. Made with or without display lids and slip-over covers. No raw cut edges or outside locks mar the outside printed surfaces or finished appearance of the carton. Patented.



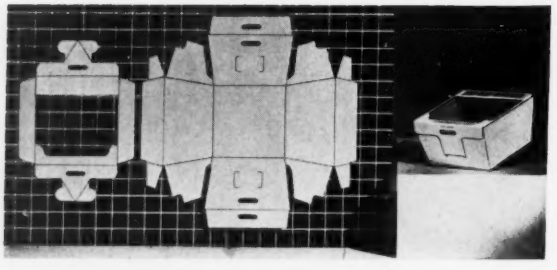
30

30. TWO-PIECE SIMPLEX STYLE CARTON. A carton construction which is rigid, easily set up and free of locks or tabs on exterior surfaces. The web corner construction prevents leakage when packing frosted foods. This style is also adaptable for shoes, textiles and other types of products requiring a two-piece carton. This is a patented type.



31

31. NOLOX CARTON. A new type of carton which has already proven its value from an economical standpoint. This carton is delivered in flat prefolded form and it is only necessary to raise the sidewalls with a quick snap to set them up into rigid position. The specially designed corner lock is so arranged that after carton is set up the sides and ends do not collapse. This carton can be made with separate or attached cover. Patented and manufactured under license on special equipment.



32

32. BERRY AND VEGETABLE CARTON. This type of carton has proved its adaptability to replace the ordinary wooden basket used for berries, small fruits and vegetables. Overlapping sides are wire stitched to set in proper position for use. Raised bottom and slotted sides insure proper ventilation for contents. Can be equipped with transparent window cover with locks to hold it secure. Patented.

XUM

ANOTHER OUTSTANDING FOLDING BOX

"designed and made by National"



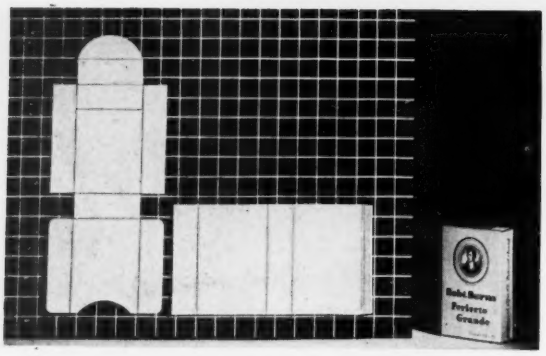
NATIONAL FOLDING BOX CO.

EXECUTIVE OFFICES AND MILLS
NEW HAVEN, CONN.

NEW YORK
943 Chrysler Building

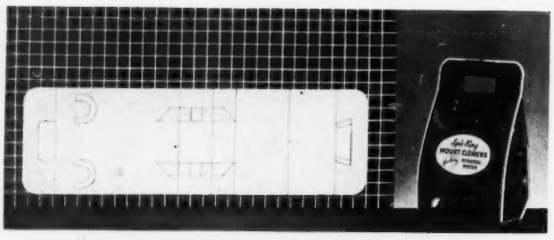
BOSTON
143 Newbury Street

PHILADELPHIA
1201 Chestnut Street



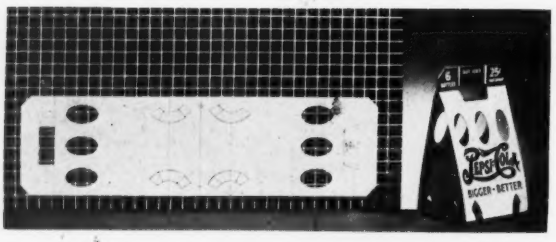
33

33. TUBE AND SLIDE. Consists of a folding inner portion, variously contrived, to be inserted in a tube on which the design is printed. Access to the contents is easy and quick. It offers adequate protection for a wide variety of products, such as cigar packs holding five or ten popularly priced cigars. When this style is made with an inner tray it is well suited for pills and capsules which may be carried in the consumer's pocket.



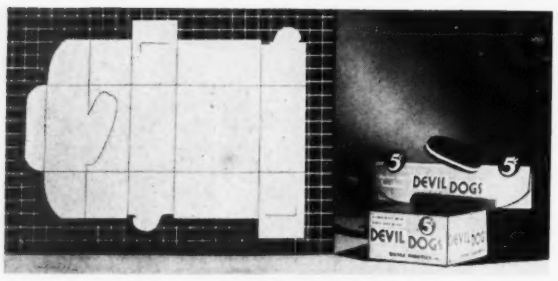
34

34. BOTTLE CARRIERS. This construction has numerous advantages for doing an excellent job of carrying three or six bottles. It requires a minimum amount of material having little or no waste, exceptionally good printing surface and more than enough strength. When assembling this carrier for packing, a simple metal form makes setting up semi-automatic. Patent applied for.



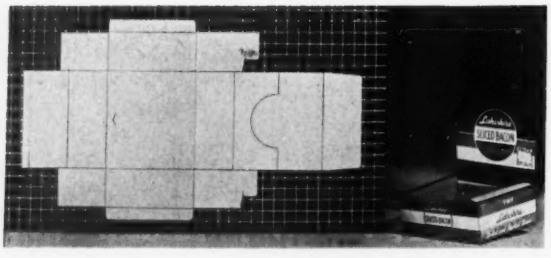
35

35. THREE-BOTTLE CARRIER and DISPLAY. This carrier has the feature of being an effective display and carry home carton combined. It requires printing two sides; however, printing is only required on the inside for the display feature. For economy, therefore, the outside printing could be eliminated. Patent applied for.



36

36. ONE-PIECE CARTON WITH TWO HOOK CATCHES. An economical carton for local bakery use, where small quantities of several sizes are required. A catch lock on each end holds the carton upright. This style is not sufficiently durable to stand long distance transportation or rough handling, but is used by bakeries for packaging cakes sold in their own retail stores and carried home by consumers. Also used on routes for delivery-truck-to-consumer purchases, in which case it is made with a window of transparent cellulose.



37

37. ONE-PIECE OVERLAPPING FRONT—LOCK BACK PANEL, FOLD COVER. Economical to manufacture and extensively used for display purposes, this box has the added strength of the overlapping front which is not provided in the straight front box. The box can be made with panel-fold style display top, making possible the economy of printing on only one side of the sheet.

XUM



Cartons with greater eye appeal—and buy appeal. Brighter, crisper, more uniform because of exacting technical control from pulp to finished product.

● Here are today's cartons for today's needs. *Engineered-precision* cartons that speed through automatic filling machines with less waste, fewer jam-ups, because they are more exactly made. *Engineered-precision* cartons that mean better sales, because their crisp, uniform brightness makes them more appealing in modern open or mass displays.

"Engineered Precision" means making cartons more scientifically all along the line—*from pulp to finished product.* It means checking, testing, proving by scores of technicians and chemical engineers in the two Gardner-Richardson plants—to insure *in advance* that your cartons will have that extra plus that means extra sales, extra profits.

SPECIAL ENGINEERED PRECISION CARTON BOARDS

In addition to the standard grades of folding boxboard, Gardner-Richardson offers you the following specialized boards:

LITHWITE . . . *a smoother, whiter, economical boxboard that prints with extraordinary color brilliance.*

GREASENE . . . *a boxboard for the economical protection of products with grease or oil content.*

HYDRO-TITE . . . *a special boxboard for products that need moisture-proof protection.*

Sample cartons made up to your specifications for inspection and test. Write.

PUT YOUR CARTON PROBLEM UP TO THE GARDNER-RICHARDSON CARTON ADVISORY COUNCIL

The group of experts in this Advisory Council stands ready to work with you in solving any carton problem . . . whether it means developing a new board, new ink, new design, or research into new fields of product protection. This service is yours, without obligation.

The GARDNER-RICHARDSON Co.

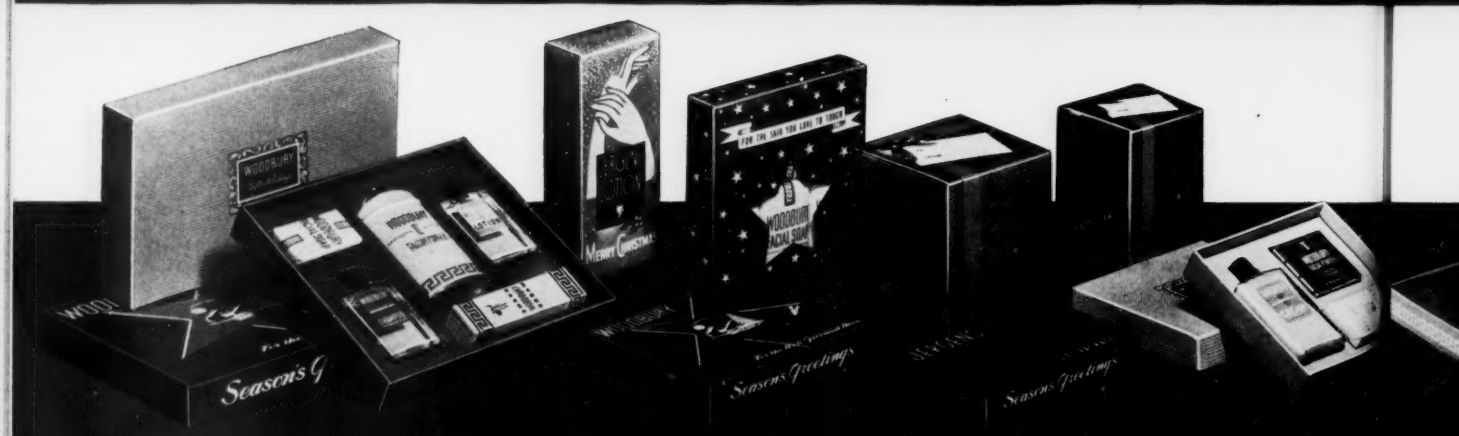
DETROIT



DRUG AND C



FOOD PACK



HOLIDAY

r·t·g

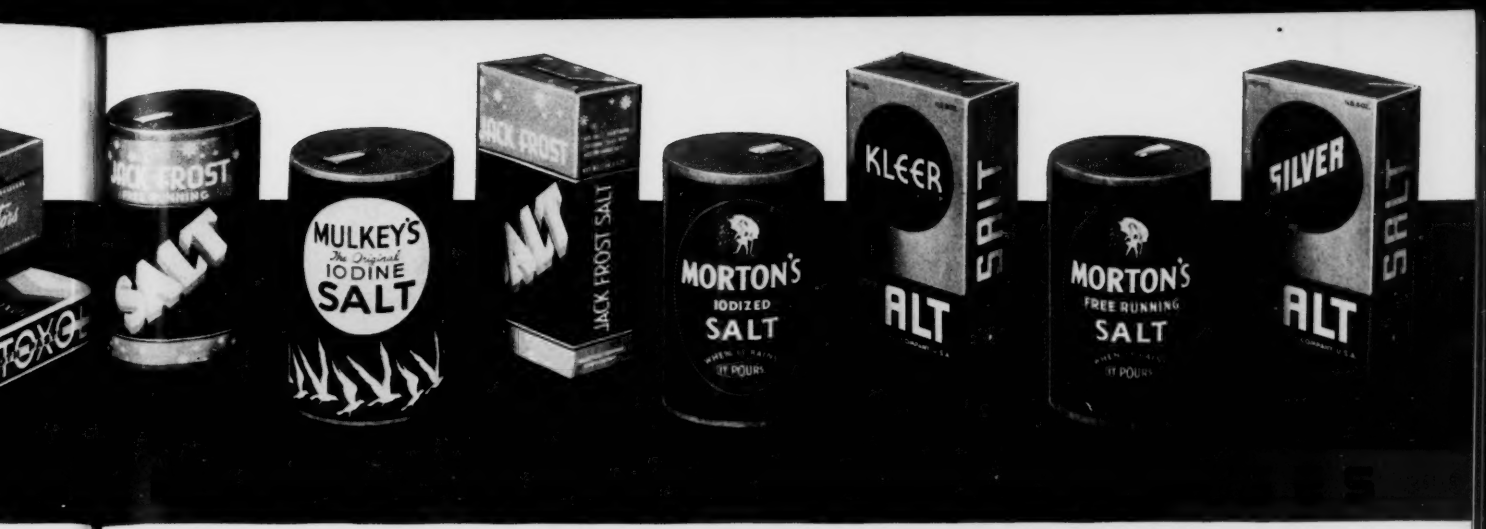
R-T-G packages are varied and extensive. We make containers and displays for almost every type of product. Each one represents a study based on sound merchandising and engineering principles plus quality controlled production.

The RICHARDSON

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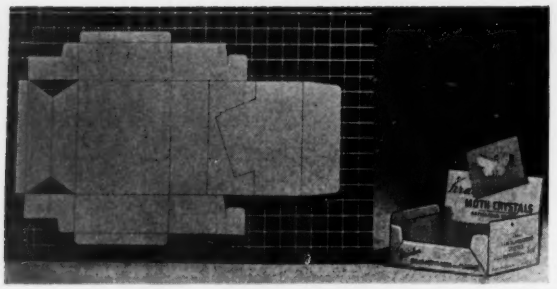
The skill and facilities of our well balanced packaging organization offers you expert counsel. This background has enabled R-T-G packaging to be among the leaders in the successful merchandising of many high grade products.

TAYLOR·GLOBE Corp.

CINCINNATI · OHIO · U.S.A.

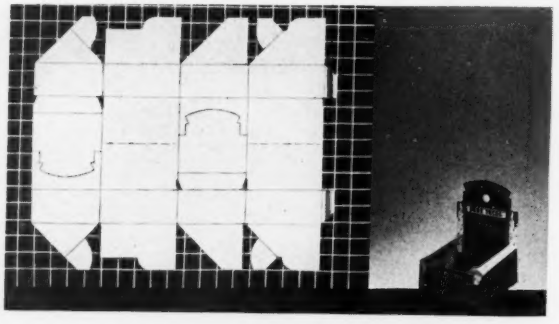
PITTSBURG · BOSTON · MEMPHIS · OMAHA

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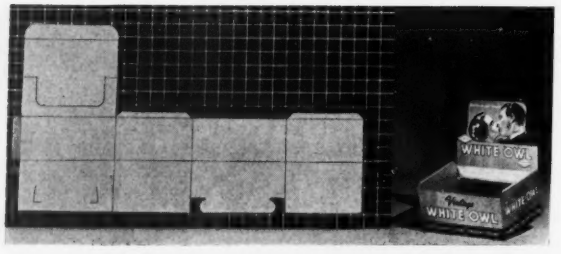
38

38. ONE-PIECE OVERLAPPING LOW FRONT DISPLAY CONTAINER. Similar to No. 37 except front is cut down to show face panel of articles when they are packed in an upright position. The tuck flap at the top of the container should be made long enough to provide full protection for the packaged contents at the front corner, where the low wall of the display container offers a relatively weak point.



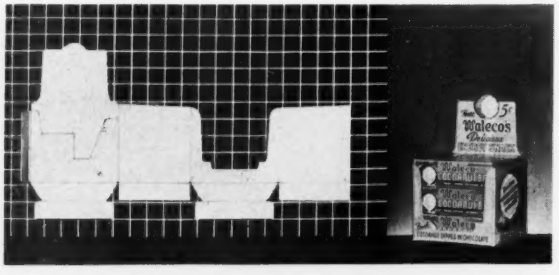
39

39. QUICKSET TWIN CARTONS. A new high speed economical twin carton that is designed to employ one piece of box board. They are so arranged that an easy pull at the corners separates them. With a flat carton left in each hand—a slight push against your chest sets them up automatically. These cartons are ideal for high speed production lines where space is limited. Patented and manufactured under license on special equipment.



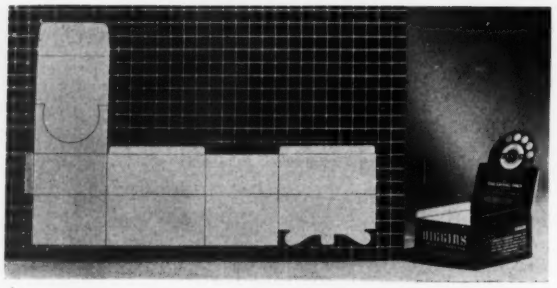
40

40. PANEL-FOLD DISPLAY CONTAINER WITH LOCK BOTTOM. Simple in construction and setting up. Cover is so arranged as to make an attractive display panel. Protective cover is optional. Stands flat on the counter and provides good visibility to the displayed items. Requires printing and coating only on one side of the board.



41

41. BROOKS TWIN DISPLAY CONTAINER. This container is a lock bottom low front, with a pivoting swing display card. The display card is designed to give the effect of printing on two sides. This effect is gained by twisting the card 180 deg. when display is set up.



42

42. PANEL-FOLD DISPLAY CONTAINER—WITH THREE CATCH LOCK BOTTOM. Same as No. 40 except bottom has three catches to carry heavier contents. The reader will note the wide number of variations in tab locking devices which are available to secure either ease of opening, sturdiness, the ability to carry weights, or some special feature such as tamper-proofness.

XUM

Sefton Can PARADE



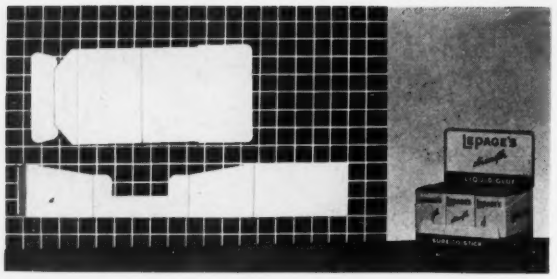
Designed to Fit Your Product

Each year products not previously packed in fibre cans are swelling these ranks.

SEFTON FIBRE CAN COMPANY

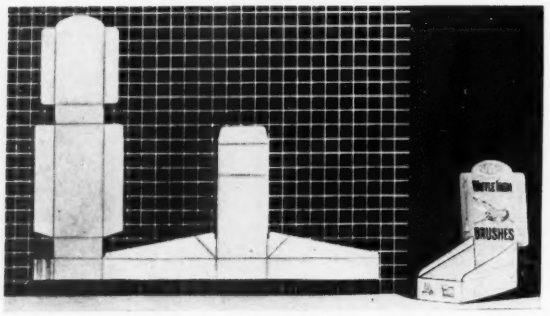
Plants—St. Louis, Missouri • New Iberia, Louisiana

DISTRICT OFFICES: Los Angeles San Francisco Denver Tampa Chicago Des Moines
New Orleans Boston Detroit Kansas City St. Paul Omaha New York Cincinnati Cleveland
Oklahoma City Pittsburgh Memphis Nashville Dallas Houston Salt Lake City Seattle



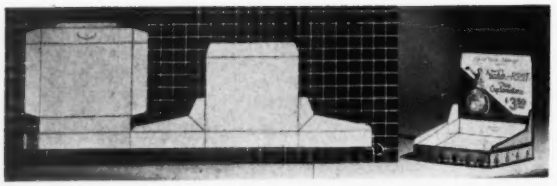
43

43. BROOKS TWIN DISPLAY CONTAINER. A patented twin display container, the two sections nesting into each other, giving the dealer two distinctive counter displays. This unit of two containers requires a protective sleeve for shipping. It is economical and easy to set up by the packer and the retailer.



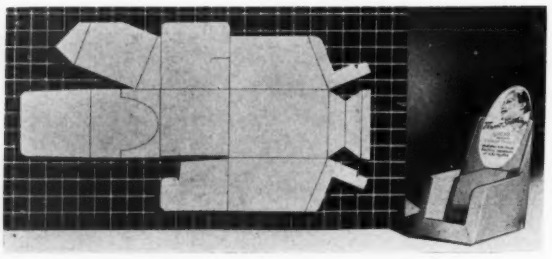
44

44. BROOKS DOUBLE-COVER DISPLAY CONTAINER. An elevating display in which the retailer must set up the display panel in order to uncover the contents, with a positive wing type support for elevated section of the container. An important feature in containers of this type is the element of fool-proofness in respect to the dealer. The ideal calls for a unit for which there can be only one way—the correct way—of opening for display purposes. Short of this ideal, the fullest, simplest and best illustrated descriptions for setting up will prove of aid to the dealer.



45

45. BROOKS TILTING DISPLAY CONTAINER. This style is equipped with a rear tab which the dealer elevates and secures in the rear panel, effectively displaying the merchandise at a desirable angle. This tab may be seen as indicated in the diagram-photo, upper left hand corner. This is a patented display container type of construction.



46

46. RHOMBOID DISPLAY CONTAINER. The sloping sides and special construction of this container permit of displaying goods in slanting tiers. Provided with protective sleeve, it may be shipped packed in set-up form ready for dealer to display. Well suited for small items such as cartoned bottles and tubes. One of a number of variations of the Rhomboid class.

XUM

A Gift Box



FOR ARMOUR AND COMPANY

by

BOYNTON & COMPANY

SPECIAL PACKAGING DIVISION

CHICAGO, ILLINOIS

ALIVE to the demands of Modern Merchandising for the BEAUTIFULLY DIFFERENT in Gift Packaging... Armour and Company's 1939 Xmas Gift Box of green metalized wood with "dual swing" satin finished (solid) brass covers reflects the alertness and ingenuity of our Packaging Division.

★ We can help YOU obtain the unusual in design and composition when planning your gift boxes, silverware chests or counter displays, made of carved, molded or embossed wood in conjunction with metals and plastics.

★ Adequate production facilities permit us to be STRICTLY COMPETITIVE

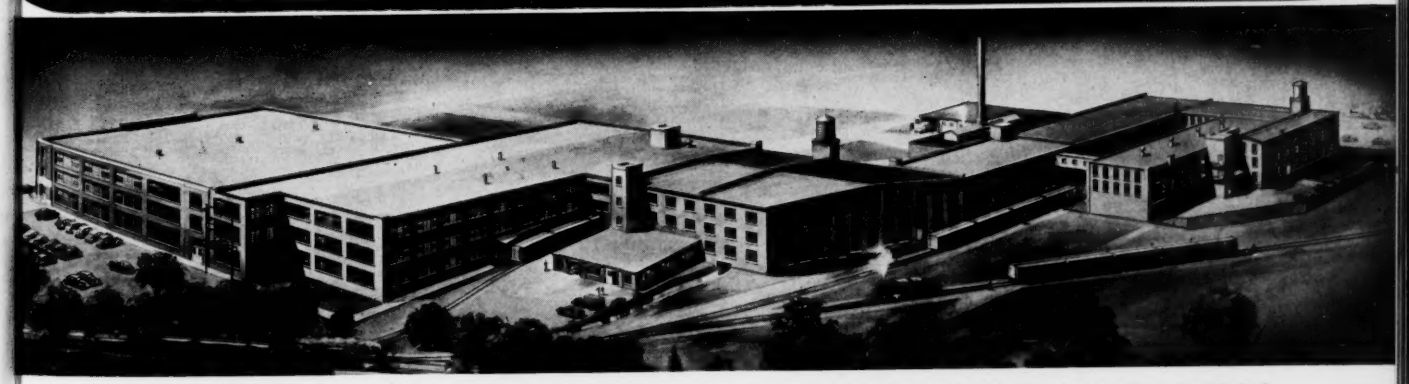
PRECISION WOODWORK—SINCE 1885



XUM

Boxes of many varieties from a modern plant





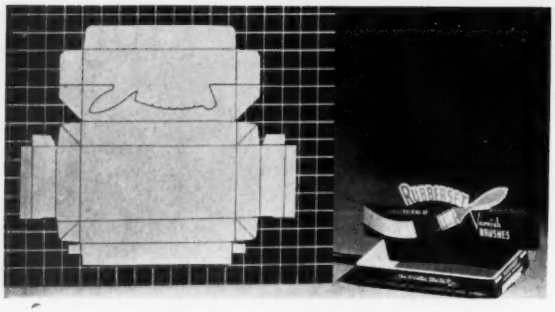
SET-UP • FOLDING • CIGAR • BOXES • TRANSPARENT CONTAINERS
MOISTURE and GREASE PROOF BOARD for SET-UP and
FOLDING BOXES • LITHOGRAPHY • LETTER PRESS and NOVELTIES

LEBANON PAPER BOX COMPANY

LEBANON PENNSYLVANIA

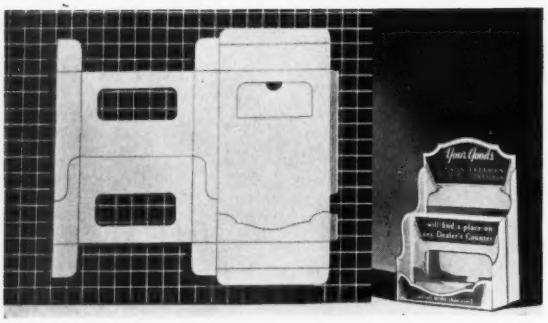
New York Office, 51 Madison Ave. New York Warehouse, Jersey City, N. J.

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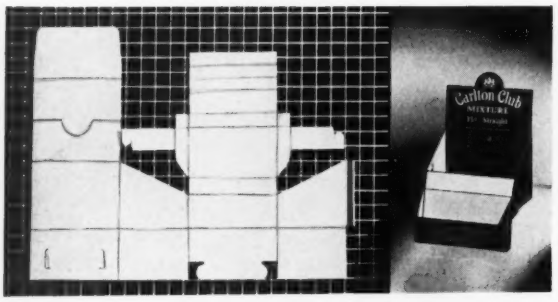
47

47. ONE-PIECE SIMPLEX CARTON DISPLAY. An efficient container and display unit. Die-cut cover offers excellent advertising display. Easily set up and free of locks on the exterior surfaces. Its most popular use is for one-dozen units such as paper wrapped toilet soaps, automotive or hardware items. Does not require protective sleeve as cover closes with front and side tucks. The side tucks, furthermore, increase the size of the display panel itself.



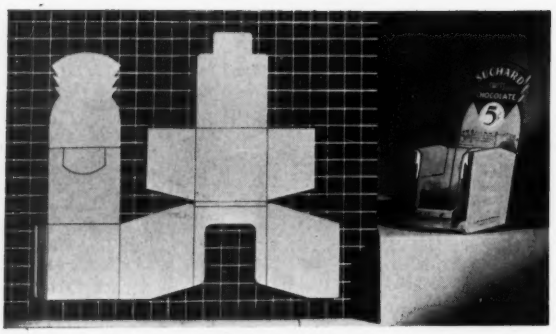
48

48. SKYSCRAPER (BROKEN BACK) DISPLAY CONTAINER. Patented container for displaying products in two tiers in an upright or "skyscraper" manner. Made with easel to hold second tier in raised position. Scored in center so that for shipping it folds up, but is readily set up for display by the dealer. When folded for shipping, the two halves of the unit so interlock as to form one flat, rectangular carton with all merchandise protected on all sides.



49

49. FRONT PANEL, LOCK BOTTOM DISPLAY CONTAINER WITH POCKET. An ingenious display by which contents are sold from the stock packed in the main portion of the container, while the pocket front permits an effective continuous display of the actual article. Prevents unsightly gaps in the display line, which is a weakness in many display containers. Note how the pocket front hangs below counter level or level of step on which main portion of display rests.



50

50. DARRAGH DISPLAY CONTAINER. The main feature of this unit is that contents, when loaded for shipment, are in an upright rectangular position, but when ready for counter displaying, they are thrown to a stacked position offering excellent visibility. On display the contents slant backward with their front faces at right angles to the consumer's eye. Frequently used for tall products such as candy bars, wrapped candies, and similar items.

IN THE Ace SPOTLIGHT PARADE..



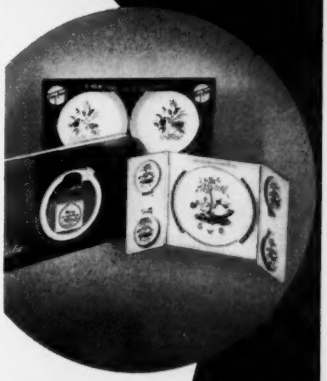


YEAR after year the spotlight parade of Ace craftsmanship shines on many satisfied Ace customers. The few examples shown on this page indicate how we meet the many every day problems of folding carton and counter display designing with sound, intelligent planning within our own creative department. Day after day, just such problems as those shown here are trusted into our hands for development along sensible lines. Into every Ace creation is built the unusual but sound principles of consumer appeal — plus product enhancement, which in every case has resulted in greater return for the few extra dollars invested. Because why?—because creative genius and "horse sense" have met on common ground.

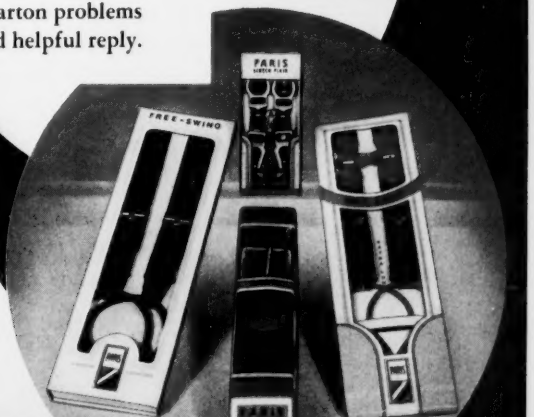
•

A letter outlining your carton problems will receive a prompt and helpful reply.

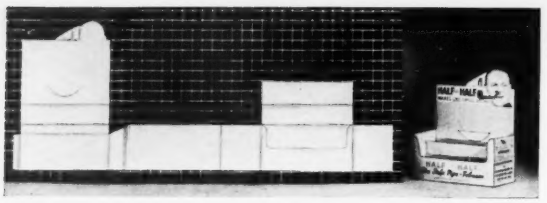






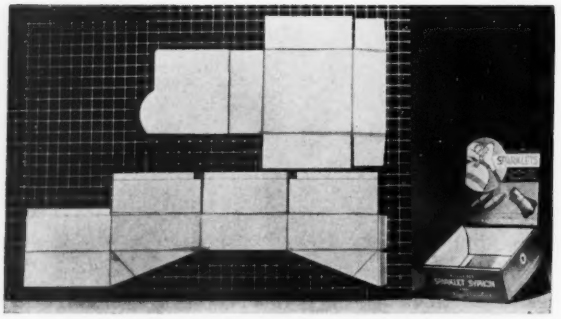


ACE CARTON CORPORATION
CREATORS OF FOLDING PAPER CARTONS, FOLDING DISPLAYS AND DISPLAY CONTAINERS
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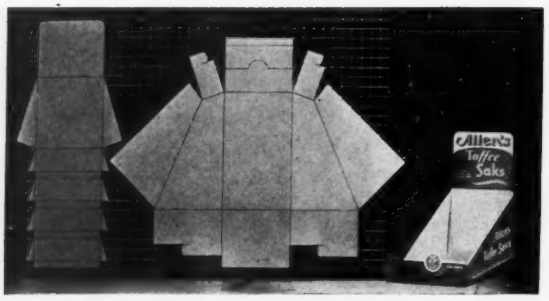
51

51. TWO-STEP DISPLAY CONTAINER. Patented display which shows products in two steps or tiers. Made in one piece, shipped flat. Easily set up by pushing down on two upright pieces which are scored to form the steps. Requires protective sleeve for shipping filled with merchandise. A simple, attractive display unit of sturdy construction and good counter stability.



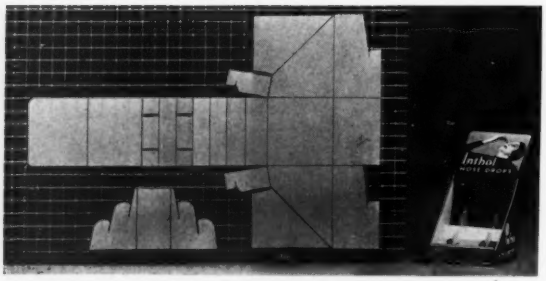
52

52. SIMPLEX DISPLAY CONTAINER. A special easel permits tilting this container at different angles, for effective display. Requires printing and coating one side only. Protective sleeve necessary for shipping. Principal feature is the simplicity with which the dealer may display the goods at an angle. Display panel is equipped with supporting flap which enables advantageous showing of the advertising message.



53

53. RHOMBOID DISPLAY CONTAINER. An effective new type of display container in which the individual packages are displayed in a staggered manner. Particularly useful for fragile items packed in glassine or transparent cellulose bags. Keeps packages in neat position while on display. This is a patented type of display container construction.



54

54. RHOMBOID TIER DISPLAY CONTAINER. A novel development, combining the stepped and tilted back arrangements. Well adapted for display of small articles. Provided with inner packing and protective cover to ship in set-up form. Note the interior dividers which prevent lateral movement of the products on display. A patented variation of the Rhomboid type of display container.



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MISS LOIS ARMSTRONG,
Guaranty Bldg., 6331 Hollywood Blvd. Phone: Hollywood 0111

St. Louis Office
The DICK DUNN CO.,
Merchandise Mart Bldg., 12th Blvd. & Spruce St. Phone: Central 3544

Detroit Office
H. E. BROWN,
2842 W. Grand Blvd. 319 Curtis Bldg. Phone: Trinity 2-0191

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Gales
CHOCOLATES
BOSTON-ST.LOUIS U.S.A.
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TO 'ALL WHO "GIFT PACKAGE"

SMITH CRAFTED CHICAGO

.... this story of SMITHCRAFTED versatility in creating and producing gift packages to fit *any* product—*any* merchandising problem.

These two lovely packages, for the same customer, for the same occasion, for the same trade—were required to be entirely different from one another to meet two traditional deluxe package price levels—both for volume sales. One is a rich soft *leather-like* bookbox, the other an exquisite chased-gold-effect *all metal* container—widely different in character and materials—yet BOTH SMITHCRAFTED PACKAGES, BOTH HIGHLY SUCCESSFUL.

For new and practical gift packaging ideas—for beautiful, appealing, SUBSTANTIAL containers that imply "Quality" and "Value"—consult with Smithcraftsmen.

SMITHCRAFTED containers are all custom-built to most effectively fit each individual job. Available in embossed and decorated treatments in leatherette, thin sheet metals, plastic board, etc. Practical production in quantities as few as 1000 and as many as 100,000, and in sizes from very small to quite large, as the Heinz Treasure Chest herewith illustrated in which is packed 15 lbs. of contents. There are no excessive mold or die charges.

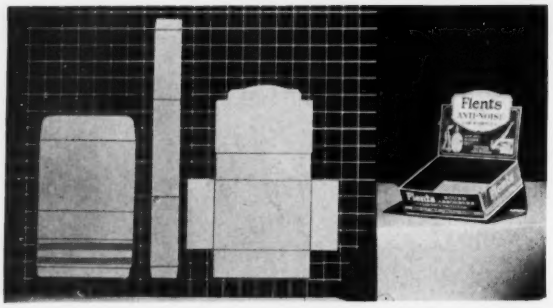
THE S. K. SMITH COMPANY

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New York Office, 52 Vanderbilt Ave., MUrray Hill 9-8290

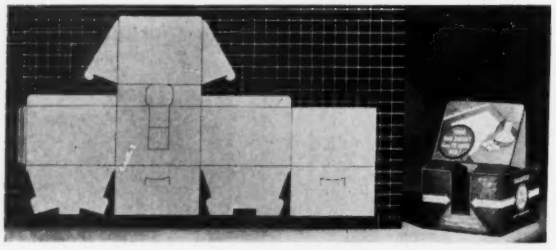


XUM



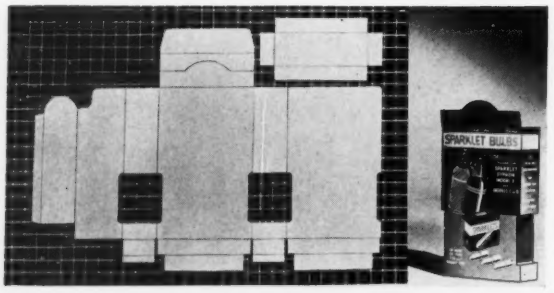
55

55. THREE-PIECE TINSLEY COUNTER DISPLAY CONTAINER. A box of patented design, so contrived that the cover, folding under, proves an easel support, to display the goods. A remarkably successful type of display box because of its simplicity of construction, its ease in setting up, and because it has sufficient strength to act as a combination carrying and display box. It is susceptible to fine printing, required on one side only. The display panel is held at the proper angle by a supporting flap. Much of the universal success of this box is due to the fact that it is easily converted from a carrier to a display container by the retailer.



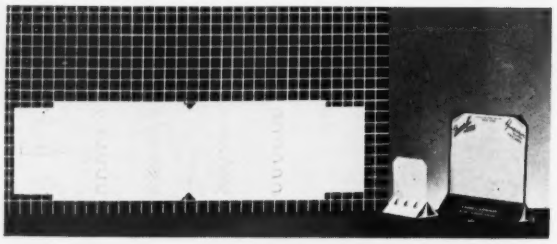
56

56. COUNTER DISPLAY DISPENSER. A novel container in which the display panel, customarily placed at the back, is placed somewhat forward, so that only a few of the articles are displayed, the greater number being behind the display panel, from which position they are dispensed. Avoids disorderly appearance of partly filled displays after a few units are sold. This device is, of course, unsuitable where mass display is the desired merchandising method.



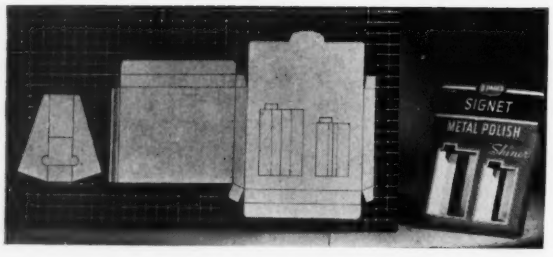
57

57. CENTER-DIVIDER DISPLAY DISPENSER. A straight tuck-end carton with center divider forming two compartments. Readily filled, products falling into position with removal of bottom one. Stands erect on counter or may be hung on wall. Center divider construction a patented feature. Important considerations in planning dispensers of this type are: (a) provision of ample withdrawal opening and (b) provision against "jamming" of product in reservoir tower. Both are easily provided for with a bit of foresight.



58

58. BROOKS AUTOMATIC DISPLAY CARD. This display card consists of a one-piece stitched blank arranged to hold 12 units (6 on each side). By pressing down on the display panel, the bottom automatically forms a base and easel for display. This eliminates the necessity of a separate easel.



59

59. MULTIPLE-PRODUCT DISPLAY CONTAINER. Effectively displays a variety of different sized products. Construction uses a reverse tuck-end carton, with extended display panel, and a separate reinforced inner platform. Products rest securely on double platforms. Fitted with easel back so display sets at an angle. Die-cuts which serve as product receptacles are, of course, varied in size and shape to meet the particular needs of each display used.

XUM

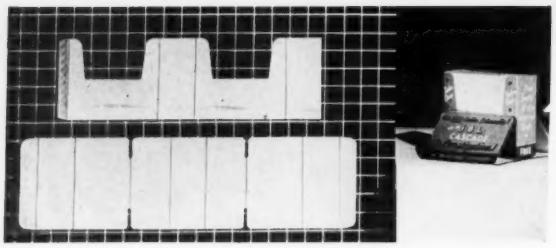
Watch Boxes
Hair Brush Boxes
Nail Polish Boxes
Perfume Boxes
Round Powder Boxes
Fountain Pen Boxes
Razor Boxes
Silverware Boxes
Playing Card Boxes
Writing Paper Boxes
Counter Displays
Smoking Pipe Boxes
Belt & Buckle Boxes
Soap Boxes
Thread Boxes
Jewelry Boxes

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THE WATERBURY PAPER BOX CO.

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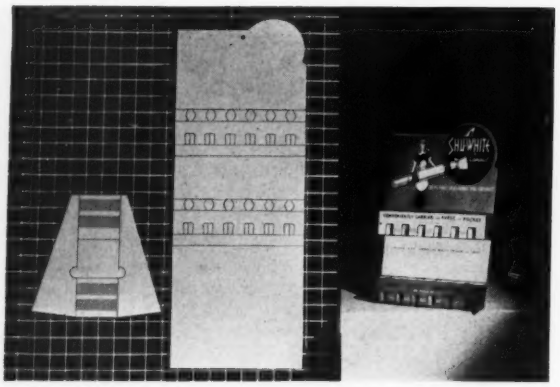
60

60. FREE PAMPHLET DISPENSER. This construction is easily set up on the dealer's counter ready to serve as a dispenser of pamphlets, advertising media or similar material. Its two-piece construction, simple and unique, is extremely inexpensive and provides an economical means of shipping and distributing free literature. Note that the unit "faces both ways"—permitting use on island counters.



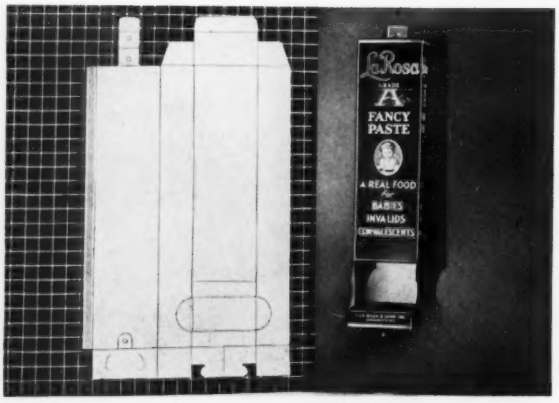
61

61. MULTIPLE UNIT DISPLAY CARD. This economical display card holds twelve tubes suspended from die-cut taps. Six units are on display with a reserve stock of six tubes on the back panel. The design repeats so that display can be reversed when front half of goods is sold. This card requires no separate easel but can be folded to ship flat.



62

62. MULTIPLE UNIT DISPLAY CARD. This card holds twelve individual units, each in its own compartment. It can be used as a counter or wall hang-up card. A separate attached easel is required when used as a counter card. For shipping, this unit requires special interior packing. Almost innumerable variations of this general type are possible, to meet special requirements of the products to be displayed.



63

63. HANGER DISPENSER. This high, narrow dispenser holds a single row of packages, piled one on top of another, with an opening at the bottom through which they are easily withdrawn. Occupies minimum space on crowded drug store counters or may be hung on the wall or other available space. Note top and bottom hanger tabs, provided as an integral portion of the display carton blank.

XUM

Cartons

OF EVERY DESCRIPTION

Here's how you'll gain by joining the growing roll of satisfied, steady users of Fort Orange cartons:

Integrated facilities assure you unusual savings. Our plant is so exceptionally well equipped that the manufacture of superior boxboard, photo engravings, printing ink and the fabrication of cartons is completed under one roof. There are no waste steps from pulp to finished carton. You gain by the consequent important economies!

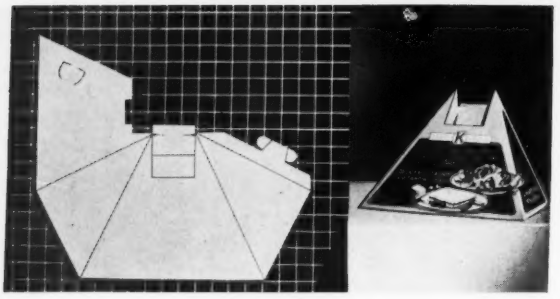
Every type of carton made here. There's no limit to the variety of constructions, sizes, weights and finishes on packages that we supply to companies in almost every field of industry. Many of the most ingenious methods of folding and die-cutting were first performed here, to the profit of our customers. Transparent window packages and high-register color printing are specialties with us.

Ideal location for shipping economies. At Castleton on Hudson we are on main freight routes—with low rates for delivery to New England, the Mid-Atlantic States and the Midwest. Quick, prompt rail, truck and water shipments. Call us now for your needs.

FORT ORANGE PAPER COMPANY

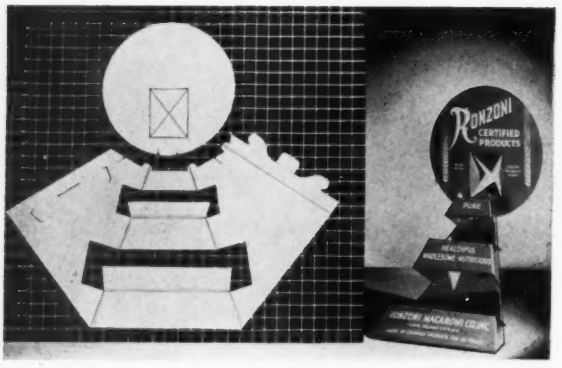
Castleton on Hudson, N. Y.

SALES OFFICES: 475 Fifth Ave., New York
Statler Building, Boston



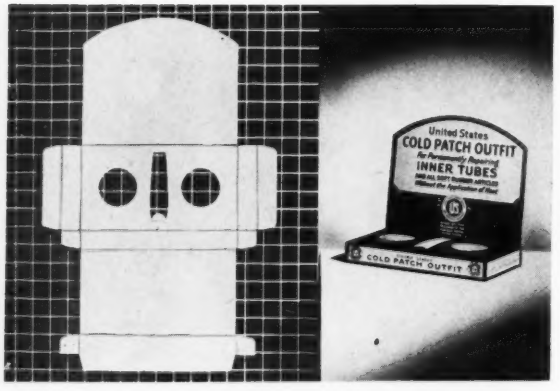
64

64. ONE PACKAGE DISPLAY STAND. A popular, effective and highly economical method of getting one package displayed on the counter. May be made to fit in corrugated container with products so dealer cannot overlook it. Cut-out on panel can be made to hold various shaped products. Although this unit ships flat and, hence, requires minimum shipping space, its erection is so simple that a relatively high proportion of displays can be expected to find their positions on desirable counters.



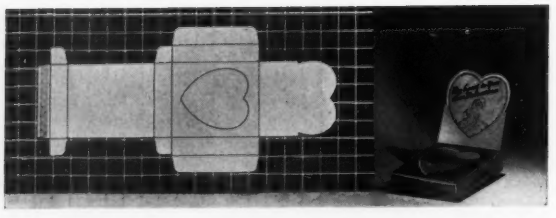
65

65. TWO-PIECE DISPLAY STAND with separate card. Similar to No. 57 except that it is made to display a number of products in a family group. By the novel structure, the necessity of hand-applied easels is eliminated. Slightly more complex in form than the type shown above. Note the use of triple locks to achieve necessary strength.



66

66. FIVE-PANEL COUNTER DISPLAY CONTAINER. This style has replaced the old type of five-panel carton which requires printing two sides and coating two sides, primarily used for introduction and sampling of new products. To set up this display, it is only necessary to insert the end tucks. Note that the four lower panels (in diagram) form a carton in themselves, the fifth panel, or tail, forming the display background.



67

67. FIVE-PANEL COUNTER DISPLAY. Same general style as No. 59 except that it has been made to serve as a display shipper and carry-home unit. As a carry-unit the display panel folds down over the die-cut carton face to provide an effective closure. If desired, this panel could be so designed as to incorporate locking tabs for added strength.

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SAVE TIME — With boxes that are quickly erected!

SAVE STORAGE SPACE — They come to you in the flat!

SAVE IN INVESTMENT — They require no equipment to erect!

SAVE YOUR PRODUCT FROM DAMAGE — SIMPLEX BOXES are extra strong and rigid!

★

Package your product in a paper carton that efficiently meets plant and production requirements; that saves space, time and money, — a box that is a silent, but effective salesman.

Look for the Trade Mark "SIMPLEX." SIMPLEX boxes are precision made. Why spend your money for imitations? Buy "SIMPLEX" Trade Marked boxes to guarantee quality.

Whatever your Product — whatever your problems, a suitable one or two piece SIMPLEX box is made to meet your requirements. Myriads of manufacturers package products in some form in paper cartons, and — SIMPLEX box users are successful.

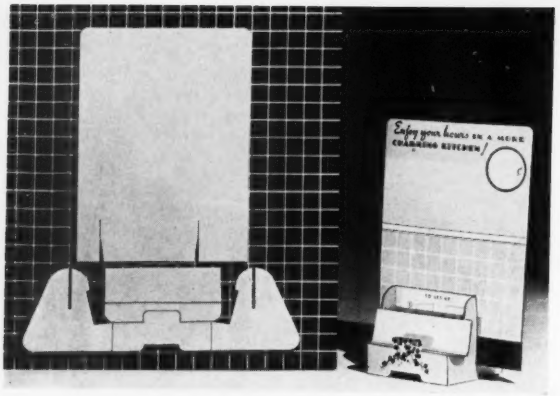
★

Write today for samples and full data.

SIMPLEX PAPER BOX CORPORATION

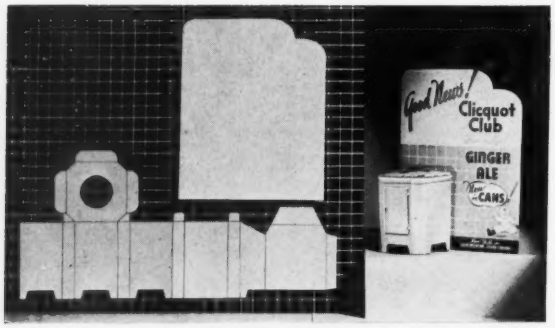
LANCASTER PENNSYLVANIA

Trade Mark
Made Under License In All Parts Of The U. S. A. And Canada



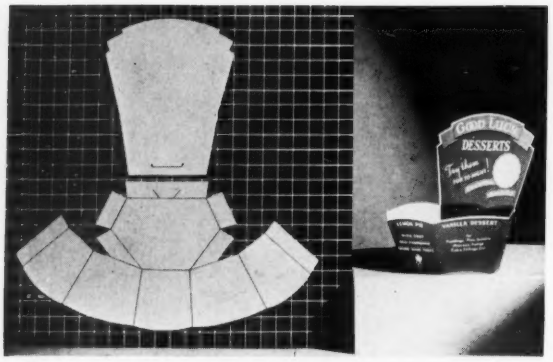
68

68. INDIVIDUAL DISPLAY STAND AND CARD. An inexpensive, effective, two-piece unit which raises the product above the level of the counter and gives close tie-up with the advertising method. By interlocking the stand portion with the display card, a rigid easel support has been formed to hold the product and card in an upright position. Some users design the card so that it may be re-used by the dealer as a unit by itself after the display has served its function.



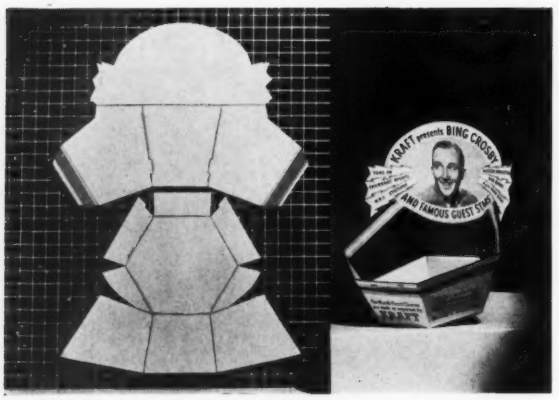
69

69. PLATFORM STAND AND CARD. Designed to project into consumer consciousness the original offering of ginger ale in cans. The actual can, in place on the refrigerator in the assembled unit, covers the empty space below "Good News!" and provides, in the manner shown in the illustration, a focal point for copy concentration. Considerations of economy dictated the simplest possible structure (commensurate with three dimensional effect). Innumerable variations of this platform type of design are, of course, possible.



70

70. BASKET DISPLAY CONTAINER. A container designed primarily for aisle table and counter display of small packages of quick-sale type, such as gelatine desserts. Does not serve as shipper but is easy to set up, displaying goods in studied disorder, thus encouraging self-service without disturbing unity of display. An extremely effective type of mass display widely used in the drug and grocery fields.



71

71. BASKET DISPLAY CONTAINER. Similar to No. 59 except for general shape of basket portion and display panel. The display panel has been creased so that it can be folded to fit a shipping case. This does not interfere with the rigidity of the panel when on display as the panel is forced into a curved position.

XUM

WOOD...consider its universal appeal for your better packages



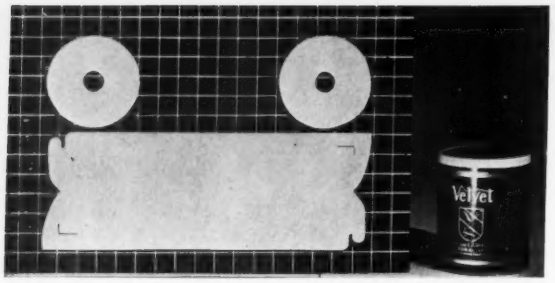
Boxes pictured are red cedar with embossed design and black walnut with genuine rare wood inlay on cover.

PETERSON BROS

165 N. ELIZABETH STREET • CHICAGO, ILLINOIS

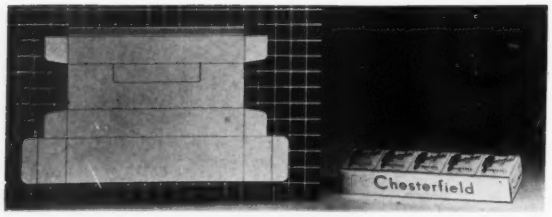
Designers and Manufacturers of Novelty Wood Boxes

Walnut • • Mahogany • • Aromatic Red Cedar • • Sycamore • • Gum • • Maple • • and other select woods.



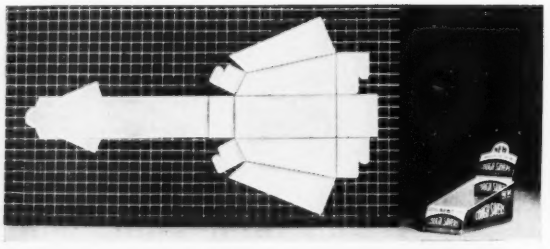
72

72. DUMMY DISPLAY CARTONS. Display units of this nature are widely used by tobacco manufacturers for dealer window displays. Shipped flat and readily set up by dealer, they save tying up salable merchandise in displays and possible spoilage due to exposure to sun and dust. Available for other products. Patented.



73

73. TILTING DUMMY CARTON. A special straight tuck carton with tilting device. Can also be made with display panel if desired. May be made to represent any desired number of dummy packages for display purposes. Excellent for perishable articles, like cheese and butter, ordinarily kept in store refrigerators and out of the consumer's sight. This unit brings the packages out into open display. Dummy display cartons, in a number of variations, are widely used for window display purposes and as display "props" generally. While occasionally made up as standard cartons in either miniature or giant size, they are even more frequently created as reproductions of a row or group of cartons formed as a single unit for convenience in display erection but presenting a multiple unit appearance to consumers.



74

74. RHOMBOID DISPLAY CONTAINER. Another variation of this type. An effective display container in which the individual contents are packed in a staggered manner for better display. Particularly useful for fragile packages put out in glassine bags. Comes to dealer ready to set up and the contents are kept in tidy position while on the display counters. Patented.

The cartons and displays illustrated on the foregoing pages do not, of course, represent every variation of every available type. They do, however, present a complete picture of the most commonly used types and of the basic varieties of folding cartons, display containers and dispenser type displays.

The reader will note reference, in many of the diagram captions, to patented types of displays and cartons. Such patents are sometimes held for the exclusive use of one carton maker. More frequently, however, they are licensed to a smaller or larger group of display and carton manufacturers.

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Cambridge containers must necessarily be good because doing business with top line companies demands more than the simple processing of glue, board and papers.

Years of technical merchandising and design research are behind every Cambridge built container. Every packaging problem receives the attention of our entire staff.

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Arrow offers its clientele • the widest possible range of manufacturing facilities for the making of boxes and displays • a designing department manned by practical designers • a service department to render intelligent and prompt cooperation • and a sales department with a merchandising viewpoint to maintain contact.

It is these characteristics which have enabled Arrow to serve so many leaders of industry in so many fields of merchandising.

REPRESENTATIVES:
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XUM

Paraffined and Waxed Cartons

Waxed or paraffined cartons were developed to fill a definite need, which had five peculiar characteristics:

1. Maintaining and protecting a moist, perishable product within the walls of its own original package.

2. Protection against the penetration of moisture, from the outside.

3. Maintenance of the original sweetness and purity of a manufactured product against contamination by outside foreign odors.

4. A practical package for perishable and greasy products, fitting in with manufacturing operations, shipping, retail store handling, storing, sale and display.

5. Economy in labor, container, shipping and manufacturing costs, so that perishable and costly products may be swiftly, economically and attractively marketed to the general public.



1. Paraffined butter cartons. Courtesy The Menasha Products Co.

2. Paraffined cartons. Courtesy The Butler Paper Products Co.



While, with the development of the packaging art, new products are being constantly developed, the major ones especially adapted to be packaged in paraffined cartons are: Butter, oleomargarine, ice cream and sherbets, lard, vegetable shortening, smoked meats—such as bacon, sausage, etc.—and salted nut meats.

The product to be packaged will determine the style, size, stock and other characteristics of the particular paraffined carton. In general, there are three major classifications, as follows:

1. **Butter cartons:** The paraffined carton is the most practical method for packaging butter in prints, whether one-lb. solid, halves, or quarters. The carton combines protection of contents, ease of handling, sanitation, identification, and general attractiveness. Butter cartons are made in these principal shapes:

   One-lb. Elgin—This is the most popular shape and is used for packaging a one-lb. solid brick of butter, two halves, or four quarters, the butter being wrapped in parchment paper before it is inserted in the carton.

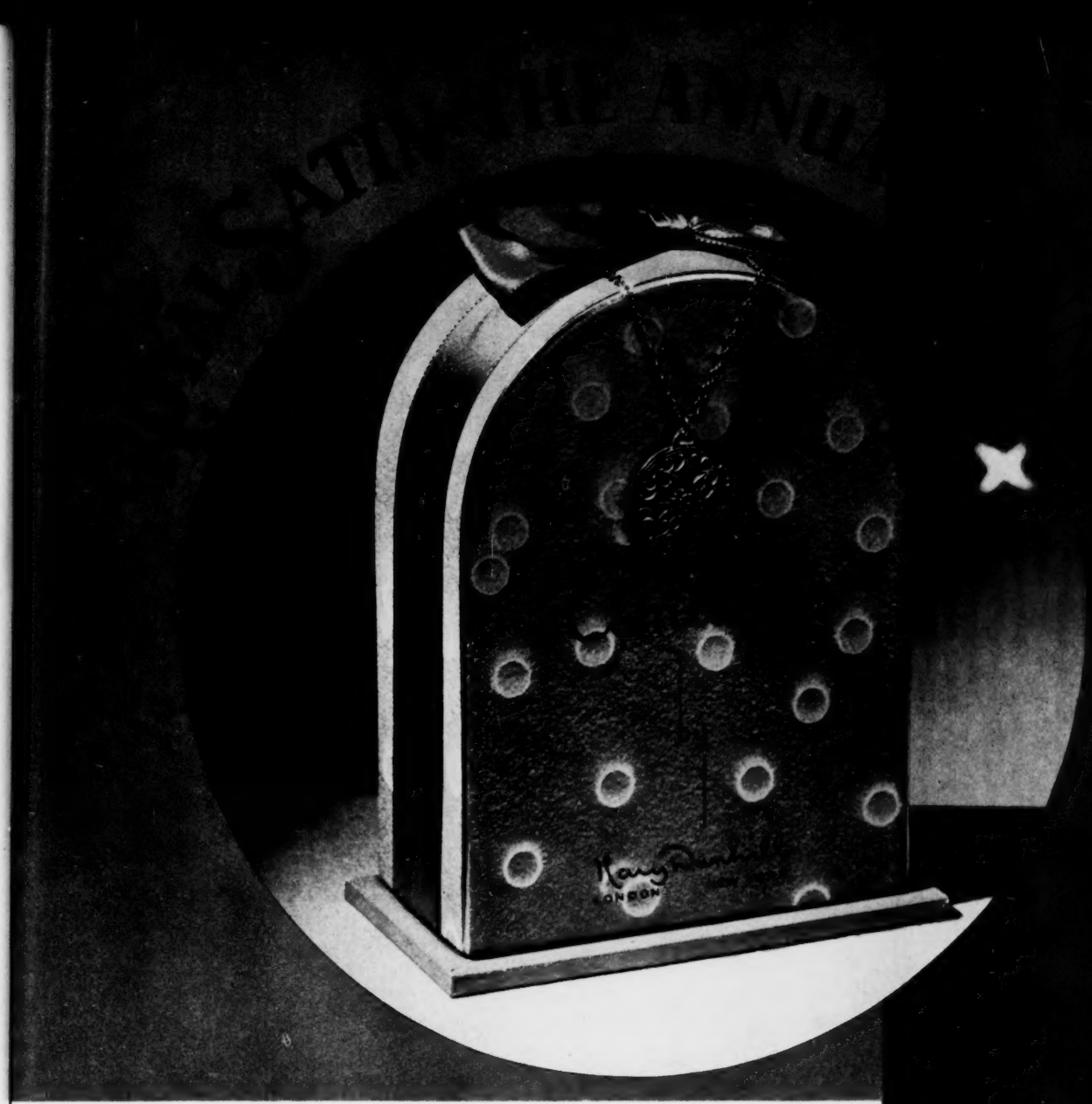
   One-lb. Eastern Flat—A new style flat carton nearly square in shape with excellent display value on the front and back panels. Used for packaging four quarter-lbs. or two half-lbs.

   One-lb. Double Length—A new long carton, distinctive in appearance, for packaging four quarter-lbs. or two half-lbs. end-to-end. Convenient to handle and ideal for display. A new and interesting development in this package is the perforated Double Length carton, having a perforation right in the center which permits the carton to be broken and dispense one-half pound at a time.

   One-lb. Western Flat—For packaging one-lb. solid, two halves, or four quarter-lbs. of a different shape than used in the three cartons above. Requires different butter-printing equipment. Used chiefly by the West Coast trade.

   Smaller-sized Butter Cartons—There is a limited demand for smaller cartons for packaging the following weights: quarter-lb., half-lb., and twelve ounces

All shapes and sizes are available either in the wrap style or glued style. Wrap-style cartons may be packed by hand or by automatic cartoning-machine. The glued-style carton is for hand packaging.



PAPERBOARDS by BUTTERFIELD-BARRY

Package Hundreds of Sales Champions

There are many good reasons why America's leading box manufacturers, both set-up and folding, specify their requirements through Butterfield-Barry. We have never stopped growing in ideas and improving methods since 1853. We have never strayed from our single goal; finer quality with increased savings to the user.

Because of our constant contact and knowledge of packaging requirements your specifications are intelligently studied and we assure you a proper delivery for your requirements at all times.

We are the exclusive distributors of Royal Satin Board, the undisputed quality boxboard for exclusive boxes. We also specialize in the better grades of board, for both set-up and folding boxes; namely, R. C. CHIP, SINGLE and BLEACHED MANILA LINED CHIP and PATENT COATED BOARD.

Single and double sheet lining our Specialty.

THE BUTTERFIELD-BARRY CO.

174-176 HUDSON STREET NEW YORK, N. Y.

OLDEST ESTABLISHED PAPER BOARD DISTRIBUTORS IN AMERICA

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2. **Ice Cream Cartons:** The four major styles of ice cream cartons are:

TUCK-END STYLE—Available in standard brick, Philadelphia, and Mojonnier sizes. The standard brick is for packaging ice cream that has been poured from the freezer in liquid form into metal containers or forms, hardened and cut (one large piece to the package) then wrapped in parchment paper. The Mojonnier size and the Philadelphia size are used for liquid fill from a filling machine.

TRUNK STYLE—$2^{3}/_{4}$ in. high by $3^{1}/_{2}$ in. wide by $6^{1}/_{2}$ in. long, quart size. $3^{1}/_{4}$ in. high by $2^{3}/_{4}$ in. wide by $3^{1}/_{2}$ in. long, pint size.

The quart size is the most popular one for brick ice cream. The ice cream is poured from the freezers in liquid form into metal containers or forms, hardened, sliced (six, eight or ten pieces to the quart), the slices then individually wrapped in parchment paper and inserted by hand.

LINERLESS STYLE—No. 1. Size for pints $2^{11}/_{16}$ in. high by $3^{1}/_{2}$ in wide by $3^{1}/_{8}$ in. long. Quart size: $2^{11}/_{16}$ in. high by $3^{1}/_{2}$ in. wide by $6^{3}/_{16}$ in. long.

No. 2. Size for pint: $2^{13}/_{32}$ in. high by $3^{5}/_{32}$ in. wide by $3^{27}/_{32}$ in. long. Quart size: $2^{13}/_{32}$ in. high by $3^{5}/_{32}$ in. wide by $7^{21}/_{32}$ in. long.

As the name implies, this style requires no inner parchment paper liner, due to the fact that it is made of solid-bleached sulphite board.

REFRIGERATOR STYLE—$1^{17}/_{32}$ in. high by $3^{1}/_{2}$ in. wide by $5^{1}/_{2}$ in. long, pint. This is a linerless-style carton especially adapted to fit into one of the ice-cube trays in an electric refrigerator in the home, keeping the ice cream in perfect condition until time to serve.

3. **Lard and shortening cartons:** Packaging shortenings in cartons, rather than in tin pails, offers many economies and production advantages, and is consequently gaining in popularity. The most popular shortening carton is the Peters style, so named because it is automatically set up on a Peters machine. This carton has lock-ends which are locked on a special machine which assembles the carton and inserts a parchment-paper liner for filling. Made in five sizes: 1-, 2-, 3-, 4-, and 8-lb. The top of this Peters-style carton opens like a Trunk-style ice cream carton, facilitating its closing after filling, and giving ready access to contents by the consumer.

In their manufacture, the cartons are first printed and died-out, after which they pass through a bath of hot paraffine, followed quickly by immersion in frigid water, which "sets" or hardens the paraffine coating, and gives a high gloss. All cartons which are to be paraffined are made of either single or double bleached sulphite (either solid or manila liner), which is the only type of folding boxboard which retains its whiteness, when coated with hot paraffine.

4. **Frosted food cartons:** Although paraffined cartons are used to a very great extent in the frozen food industry, that industry as a whole is still in its infancy and standardization has not yet taken place

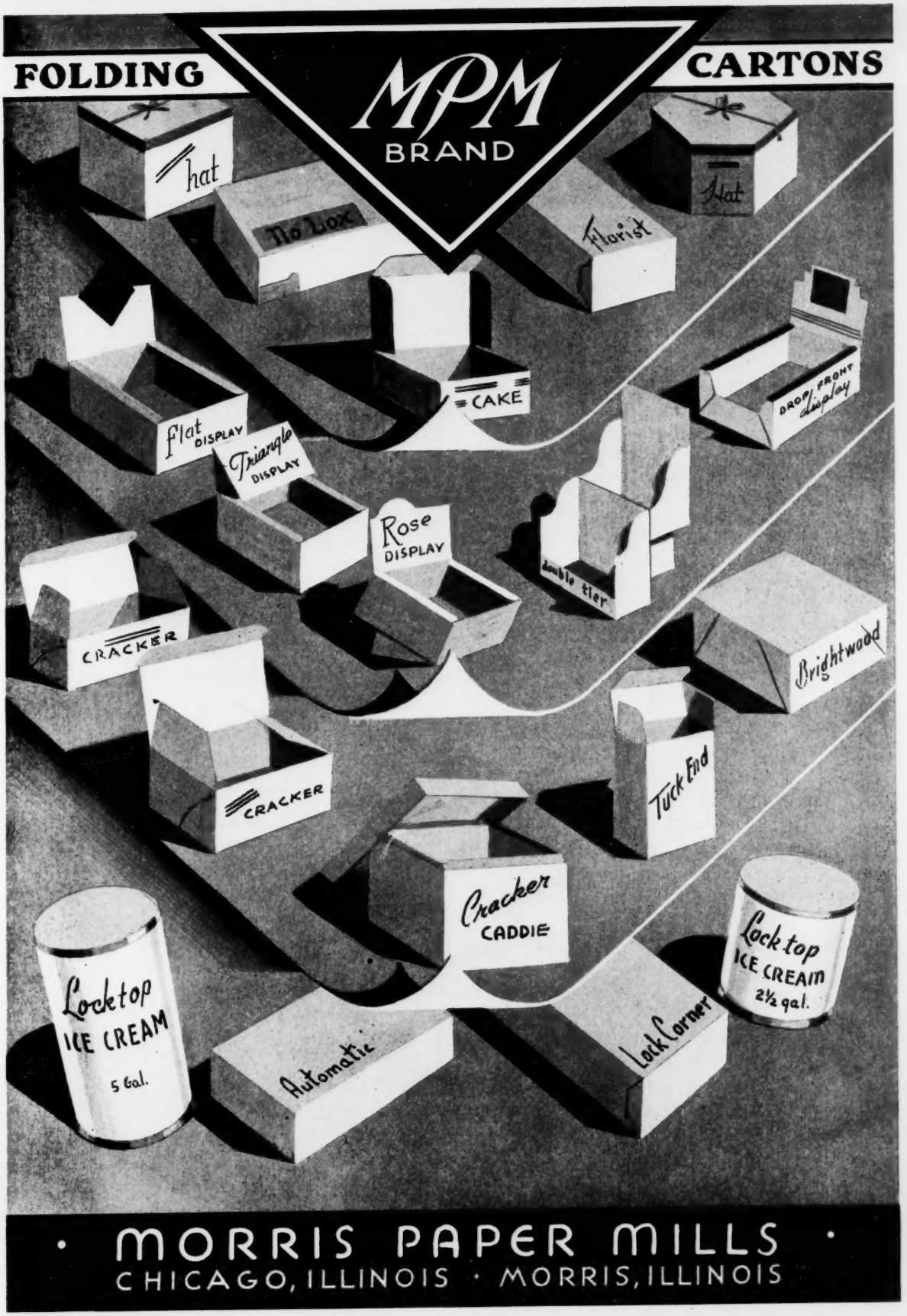
Most frosted food cartons are made of bleached sulphite lined groundwood which is well adapted to paraffined treatment without discoloration. Current experiments indicate that it is possible, at a future date, that a somewhat less expensive grain of board may prove usable for quick freezing cartons. Paraffined cartons are utilized because of their water repellency which prevents weakening of the carton stock when condensation occurs. For this reason, it is important that the coating or waxing be more flexible than in ordinary paraffined boards since, in the latter case, the coating has a decided tendency to crack or become brittle under low temperatures.

It has been conservatively estimated that products valued at around one-half billion dollars find their way from point of manufacture to retail stores, every year, packaged in paraffined cartons.

3. Butter cartons of paraffined board printed in attractive multi-color effects further enhanced by the paraffine coating. Courtesy The Gardner-Richardson Co. **4.** Newly designed ice cream roll cartons made of lightly paraffined stock with transparent cellulose window extending over top and front. Cartons lock at back with double tab lock. Courtesy The Menasha Products Co.






FOLDING
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CARTONS
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No Lox
Florist
Hat
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Flat DISPLAY
Triangle DISPLAY
Rose DISPLAY
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Brightwood
Tuck End
Cracker CADDIE
Locktop ICE CREAM 5 Gal.
Automatic
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Locktop ICE CREAM 2½ gal.
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Stayed and Stapled Cartons

Intermediate between the set-up box and the folding carton is the stayed or stapled type which is formed of a folding blank, usually pre-printed. These types are delivered to the user die-cut and scored. As finished boxes are required, the flats are taken from stock and erected, usually at a convenient point on the assembly line.

The metal edge type of box uses a patented metal stay which is cut from a reel by machine at the moment of application. The operator merely holds the blank in proper position on the anvil of the staying machine and controls the staying mechanism by foot pedal. An entire box can thus be assembled in a few seconds.

In some instances, the staying machine or machines are located alongside assembly and packing tables, thus making the whole packaging procedure a part of the production line. Other firms maintain separate assembling departments in which boxes of a number of types and sizes are assembled for hour-to-hour needs.

Boards used in metal-edged boxes are available in a number of colors, weights and finishes. Practically every type of decoration may be utilized. Stay material is available in a number of widths and in colors to harmonize or contrast with the board.

Stay metal is delivered in reels and automatically cut to the required length by the staying machine.

Among the advantages claimed for metal edge boxes is a very substantial reduction in space required for storage (when the alternative type of container is of set-up or pre-formed construction). Production of boxes is more directly related to other factory production schedules and thus the box user is free from some of the hazards involved in a reliance upon outside sources, provided that an adequate stock of blanks is maintained.

An almost infinite variety of constructions and types of metal edge boxes is possible. Most common are the one-piece, tuck lid type and the two-piece telescoping type. Metal edge boxes are very frequently used as sample mailers and as mailers for small and fragile articles, where the metal stay provides a high degree of rigidity to resist shipping shocks.

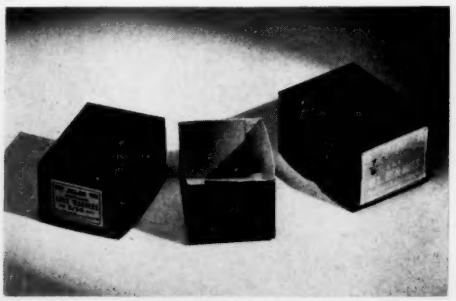
In the hardware industry and in some other cases where appearance is not a major factor, boxes are assembled from blanks with the use of stapling equipment, one or two staples being applied at each corner. This procedure is also followed in many instances for packages designed primarily for storage use by dealers.

1. A few of the many types of metal edge boxes, dispensers and displays. Photo courtesy National Metal Edge Box Co. **2.** Stapled two-piece telescoping box as used by nut and bolt manufacturer. **3.** Metal knife edge attached to folding carton for waxed paper.

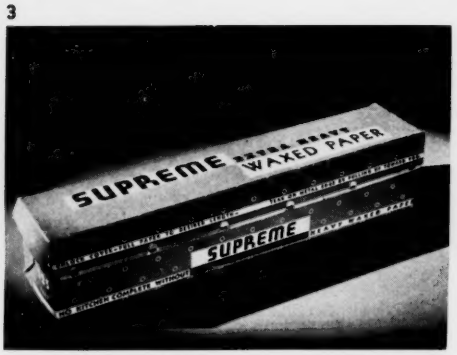
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2



3

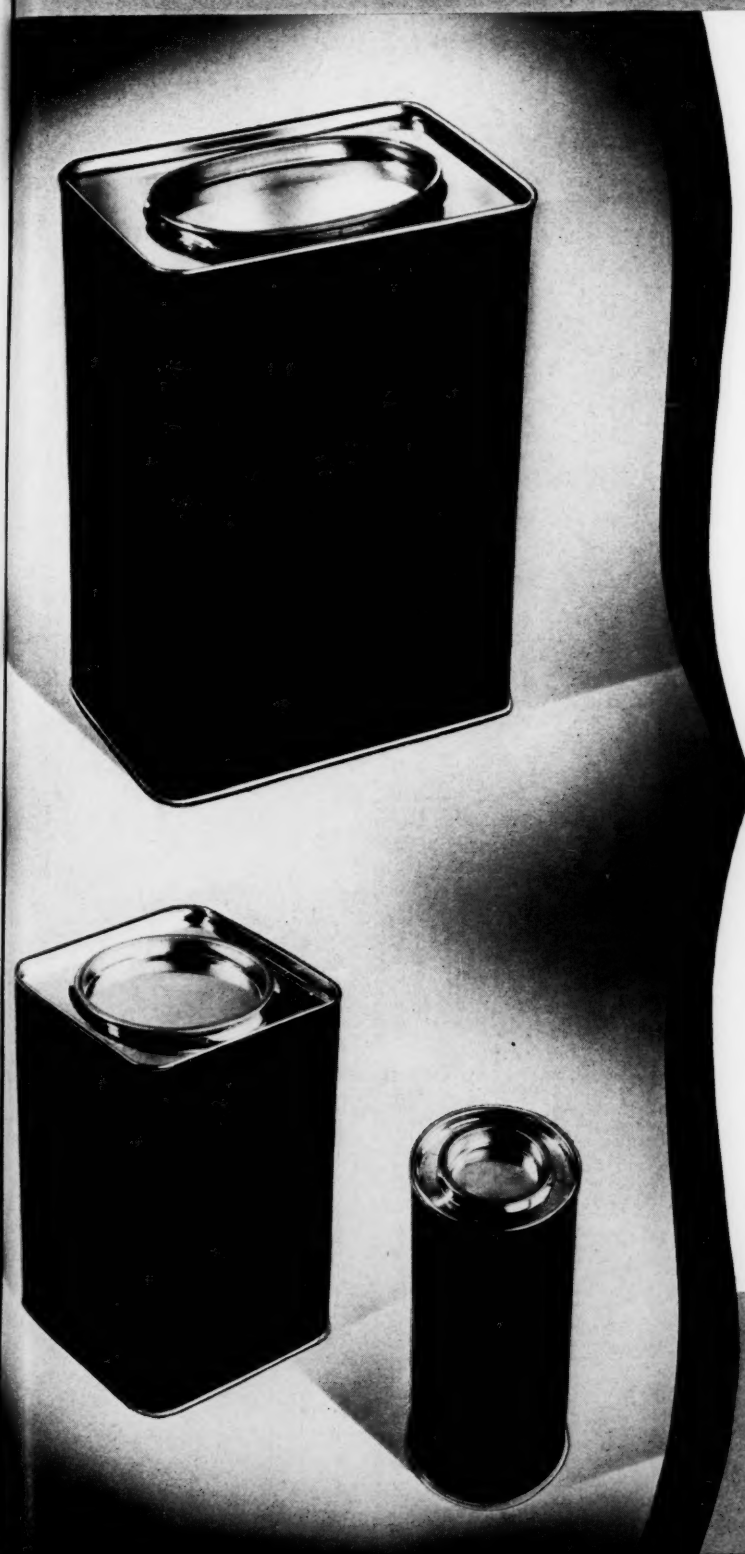


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Set-Up Paper Covered Boxes

by WILLIAM H. PERRY*

The term "set-up," when applied to a box, means that it is a completely finished box—produced and delivered in three-dimensional form—when it leaves the plant of the paper box manufacturer. It is ready to be packed with merchandise and is ready for warehousing or shipment immediately after being packed. It is manufactured from materials peculiarly produced for use in its construction. Basically, it is made from boxboard which is rigid in form, so that the completed box, when covered with one of the myriad of specially designed wraps, creates the illusion of permanence.

When the set-up box is delivered by the box manufacturer to the packager, no further processing is required. This is an important factor because it means the saving of time, and permits rapidity of handling by the packager with consequent savings of cost.

Descriptions and Terminology

(The terms used in the following description are the standard terminology as developed by the National Paper Box Manufacturers Assn.)

In the vast majority of cases the commodities for which set-up paper boxes are constructed are longer and wider than their depth. Automatic set-up paper-box machinery has, therefore, been constructed for volume production based upon these factors.

* President, Cambridge Paper Box Co.

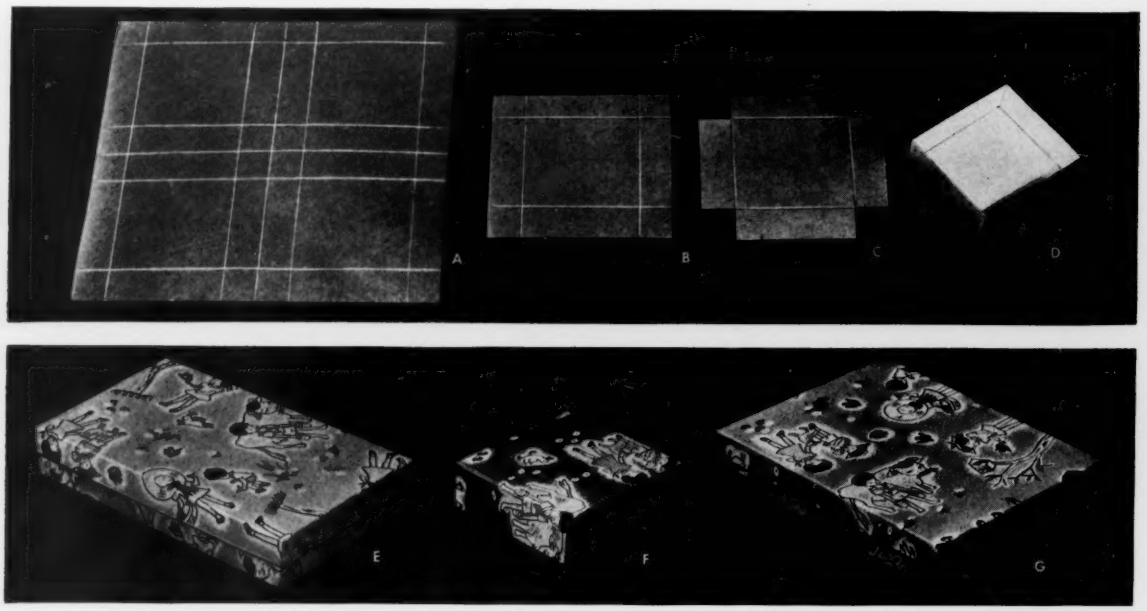
In standard practice, all measurements are given in the following order: (1) length, (2) width, and (3) depth of the box.

These three measurements are generally considered as inside base dimensions, and set-up boxes are always built from them. The lid-depth measurement comes next, its length and width being determined by the thickness of board used in the base and by the fit desired, whether tight, medium, or loose.

From this elementary form, a great variety of set-up box shapes can be made, suggestions of which are illustrated and described in the following:

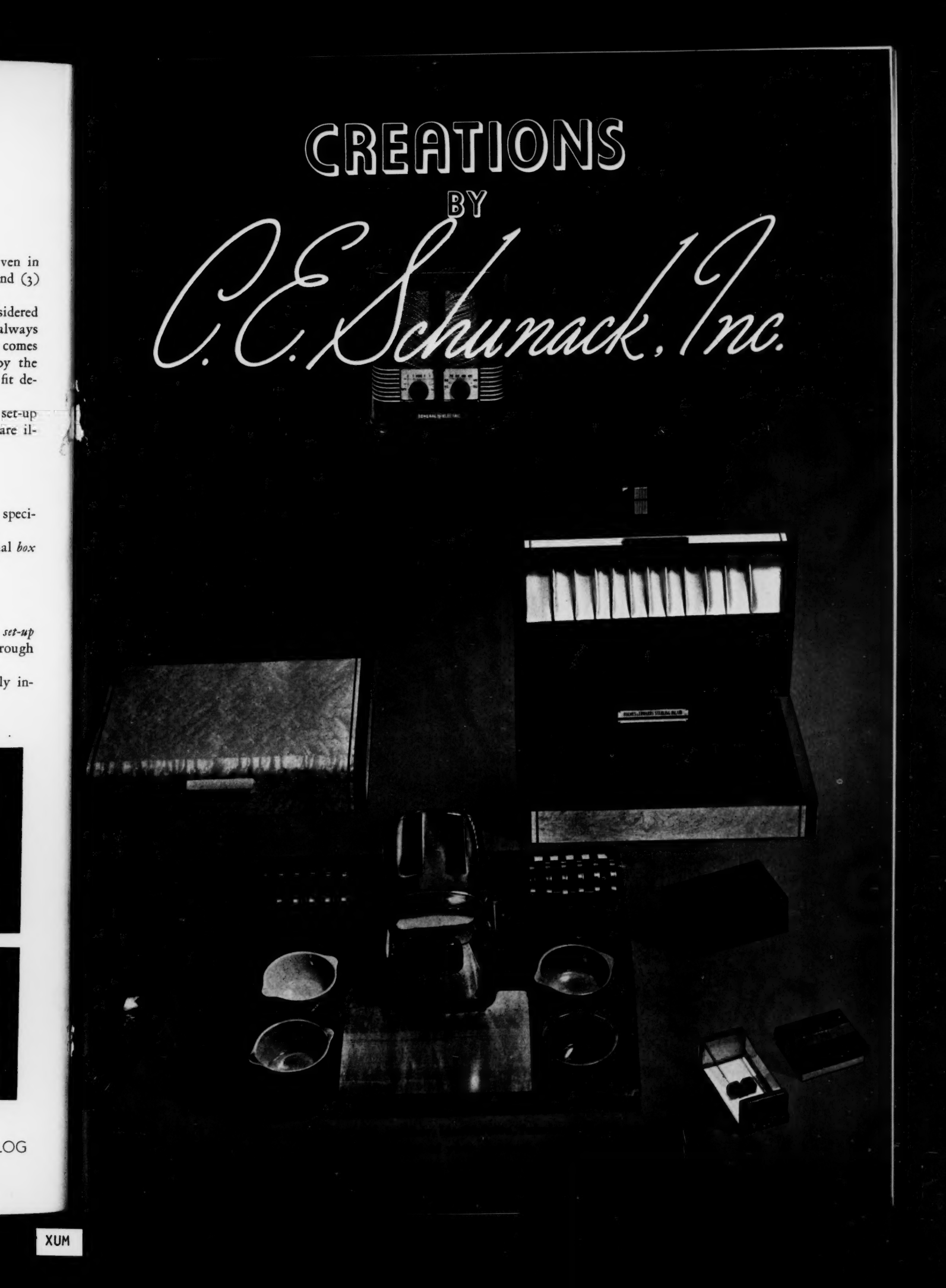
Basic Construction

(A) A sheet of *boxboard* is first *scored* to the size specified.
(B) The *scored sheet* is then *broken* into individual *box blanks*.
(C) These are *corner cut*.
(D) Next, they are *turned down* and *corner stayed*.
(E) The *lid* is processed similarly.
(F) Together they form the simplest type of *set-up paper box*, known as a "skeleton" box or "rough carton" with *shallow lid*.
(G) Next comes the *full telescope* lid by simply increasing its depth to that of the *base*.



Steps in construction of set-up paper boxes. For details see text above. Photo courtesy Shoup-Owens Inc.

XUM


CREATIONS
BY
C. C. Schunack, Inc.

(H) For greater strength, ease in opening, or smarter appearance, comes the *shoulder style* by adding an extra base or by inserting board scored to form an inner *shoulder* or *neck*.

Basic Construction (Special Cases)

Packagers sometimes require set-up paper boxes in depths greater than standard machinery will provide. For such there is special equipment in use which makes for economy in production and materials.

Thus, in a box for commodities such as millinery or bulk candy, *ended*-box construction is used. Here the saving of board more than offsets the increased labor cost of slower production.

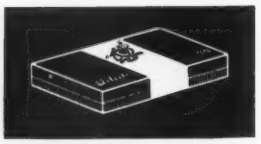
This box may be *rough* but is generally *banded* by carrying the paper around the four sides and *turning in* at the top edge and *turning over* onto the bottom. Better quality boxes are *bottomed*, which means gluing a rectangular piece of paper on to the bottom.

Certain products, such as toilet preparations, etc. are best suited to round containers wherein oftentimes the depth is a larger dimension than either the length or the width. Special automatic machinery has been developed for this type of construction.

In both of these special cases the basic construction is the same as that of the original set-up box.

Unlimited variety in the designs of set-up paper boxes can be accomplished by the addition of covering papers, and by combinations of shapes and accessories.

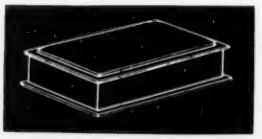
Illustrated below and on the following pages are a number of familiar variants of the basic set-up box constructions. These are presented for the use of manufacturers and designers, to demonstrate the broad possibilities for variation in the set-up box field. They should not be followed slavishly but should, rather, be considered as a source of ideas to be adapted to the requirements of the individual situation. Manufacturers and designers will do well to consult with the box maker on all proposed designs, both as to practicality of construction and as to cost. By such advance consideration of these factors, much later expense and labor can be eliminated.



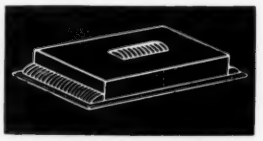
1. A regular two-piece box, telescope lid, applied design printed in two colors to give shoulder style effect; adaptable to almost any commodity.



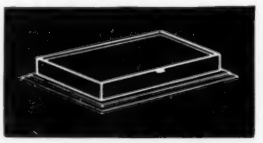
2. Shoulder-type box, made of high-quality materials, top domed for added appeal, lid hinged to base; commonly used for packaging high-priced confections, cosmetics and similar products.



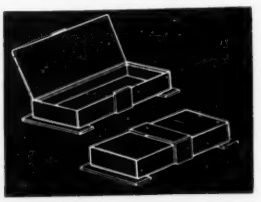
3. The well-known candy box, extension base and lid; full telescope, base and lid solid wrapped with fancy paper, foil, velour or similar materials.



4. A flat extension base with regular solid wrapped lid. Lid hinged to base at back flange of cover. Base elongated in length, augmented by quarter-round plastics at ends of base extension and segment of plastic at top center of lid.



5. Base has graduated extensions, with a flat-hinged lid recessed into base onto an inner shoulder. A small lid-pull, generally of ribbon, for ease in opening. A smartly tailored box of high quality with very flexible adaptation.



6. An adaptation of No. 5. The base extension, as well as the panels at the front of base and at the center of the lid, are of heavy board covered with paper. Contrasting color scheme gives a most sophisticated container. Again adaptable to goods where a dash of swank can augment the total effectiveness.

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and many other articles.

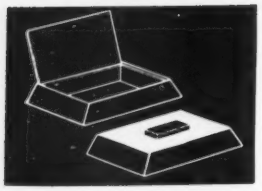
A HANDSOME, sturdy re-use package that is ideal for fruit cakes, candy, cookies, stuffed fruit and similar products. Heavy rigid construction throughout. Deeply embossed and richly decorated in a gorgeous combination of red, gold and white. So beautiful and practical that it appeals instantly to any woman. Long after the contents are gone, this gift box will be treasured as a sewing box, souvenir box or as a handy container for many small articles. Cover equipped with ribbon lift-tab.

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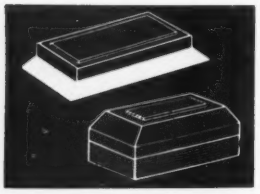
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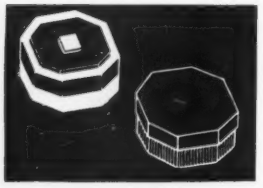
XUM



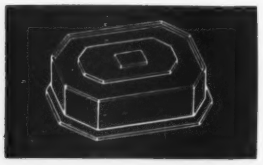
7. A fancy candy box, although adaptable, of course, to many other products. It has solid wrapped beveled base with flat solid wrapped lid hinged to recessed shoulder. In contrasting colors, with addition of ornamentation of plastics, metal, or paper-covered board, it makes a most appealing presentation. Generally used for holiday packaging.



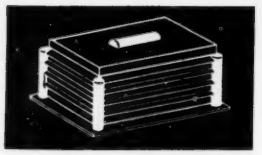
8. Left, shallow beveled base with solid wrapped lid, plus flat covered pad with regular shoulder construction. It offers another variation which, when properly styled in contrasting coverings, presents a most interesting container. Right, a regular shoulder construction with variation of the lid, which is beveled into a straight side flange for closing onto base shoulder. A flat pad is added for effect.



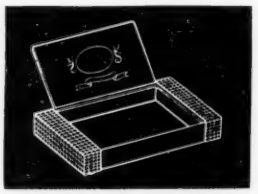
9. Left, equilateral octagon with outer base larger than shoulder on which the lid sets, giving a streamlined effect, augmented by small top plaque of plastic or chromed metal. Right, same type of octagon simplified into a simple base with shallow lid construction. In varying sizes, it becomes a smart package for face-powder, cosmetics, flowers, confections, and many similar things.



10. The general construction here is similar to No. 5, except the shape is eight-sided; viz., extension base with recessed lid, with series of two flat pads as accessory decoration.



11. Illustrates the tremendous scope of physical design. To a regular shoulder style is added an extra wide and heavy extension base, with fancy covered flutings and covered pillars, and half-round decoration added to the top. Proper treatment creates a very exotic effect.



12. Another adaptation of No. 5. The base is extended in length, with separate trays or parts added to each end; both to conceal the otherwise opened ends.



13. The "band-box" style; at left, square with an extra tray or base the same dimension as the lid, and glued onto the base to add distinctiveness; right, a round or oval band-box with all-over applied design, a familiar millinery style. Also used by manufacturers of famous brands of men's hats.



14. Mechanical and design ingenuity evolve startling and interesting shapes, such as the cocktail shaker and the star with regular extension base and lid—both formed with dies and general assembly by hand work.

XUM

1875·1940

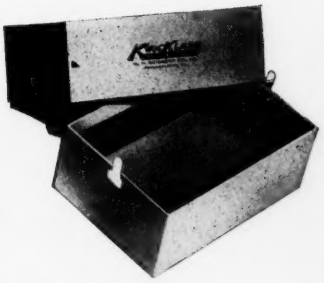
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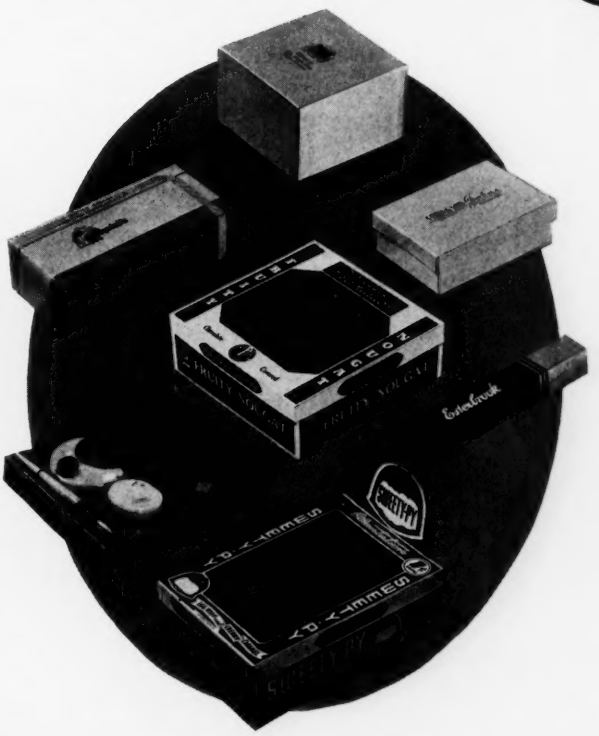
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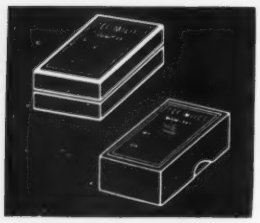
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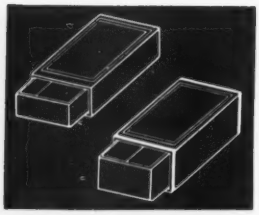
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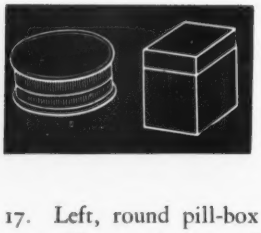
545 Fifth Avenue
New York, N. Y.



15. Left, familiarly known in drug-box fields as shoulder pillbox if square, or powder box if oblong in shape. Constructed on special automatic equipment. Four colored edges show, accomplished by the use of two different colors and widths of papers. To the top is applied the prescription label. Right, for the same purpose, its construction simplified to regular telescope base and lid, with thumb-holes located at sides for ease in opening.

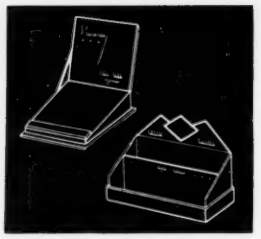


16. Left, known as white slides, produced on high-speed automatic equipment, the box being a tray with lid shell consisting of four sides with open ends. Stocked in standard sizes. Commonly used in the drug field and wherever small boxes are desired. Right, known as the dandy slide, similar in construction but with the edges of the shell left uncovered.



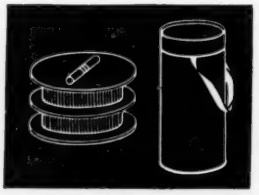
17. Left, round pill-box used for dispensing apothecary-pill prescriptions. In general construction automatically made as the shouldered pill but, of course, round in shape and extension added.

Right, shouldered utility produced in several standard sizes. Here the depth is greater than the square of the length and width. Used in the retail drug field for dispensing powders, "dry drugs," etc.



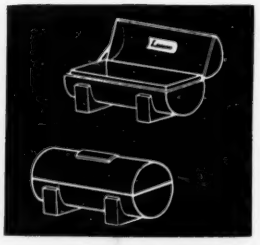
18. Left, set-up box becomes smart display. Basically, an extension plus a tapered base, with a tray added to hold merchandise, and hinged panel for interior billboard.

Right, a composite of base tray and folding board, printed on both sides and in several colors. Merchandise is packed and complete unit is ready for immediate "sales work," functioning upon arrival at the retailer.

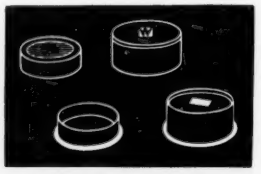


19. Left, a round box with heavy died-out circles, plus a top handle of lacquered wood applied with band of foil, gives a modern motif.

Right, a box well tailored in construction and design, with ribbon handle for ease in carrying.



20. An adaptation of a cylindrical container cut in two lengthwise, with shoulder for lid closure. Plastic pedestal adds to appearance, and functions as feet or base. Label inserted inside cover, and hinge strap or tape of ribbon to open.



21. Left, well-known round telescope box with projecting edge or extension base drum of transparent cellulose top.

Right, same style of construction except drum is of paper died out with window or opening covered with transparent cellulose.

Highly Attractive . . . .

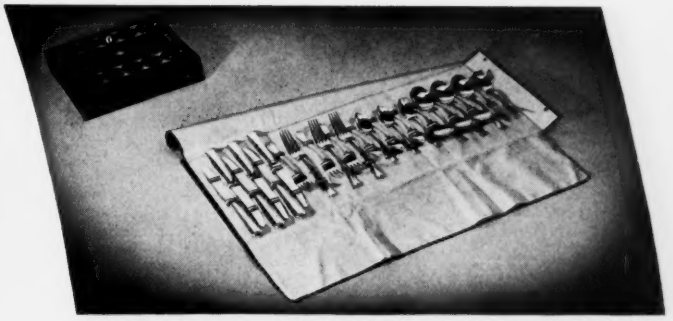
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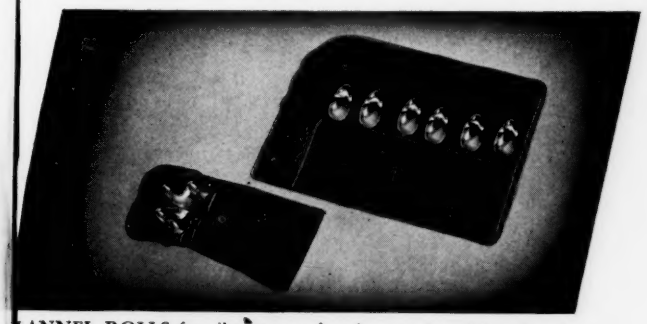
You see here only a few samples of our complete line of cloth, leather, leatherette, and fine wood packages. Our specialties are almost too numerous to show. We shall be glad to submit samples of any of these containers or design new ones to fit your particular needs. Please do not hesitate to call on us no matter how small or large your requirement may be.



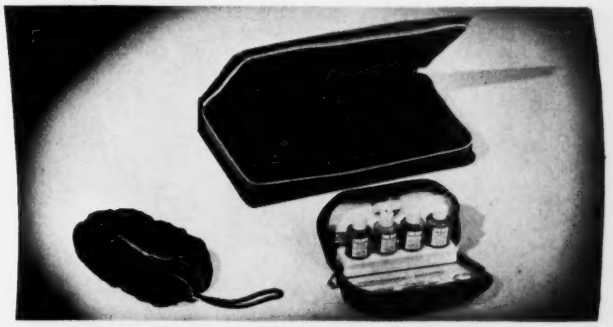
POUCHES AND BAGS for Pipes, Electric Razors, Bottled Goods, Compacts, Cigarette Lighters, etc. in duvetyns and other fabrics, beautifully stitched and finished. Furnish a rich, sturdy, yet inexpensive background for your products.



COMPACT "TUCKAWAY" CASES for silverware, pocket knives, comb, brush and mirror sets, etc. They fold into minimum space in home, retail store or salesman's sample case, yet stiff backing enables them to stand up for display purposes. Lined with duvetyns and velveteens, covered in fine-grain leatherettes, zipper or snap fastener closure. Many sizes and styles.



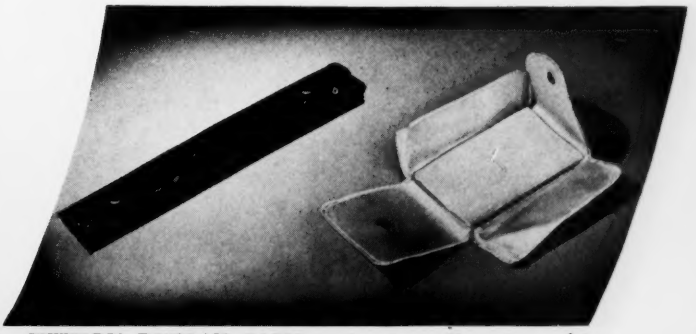
LANNEL ROLLS for silverware and cutlery, anti-tarnish and anti-st, provide a soft protective package before and after goods are sold. ade in a variety of beautiful color combinations and in many sizes for dividual pieces or larger units.



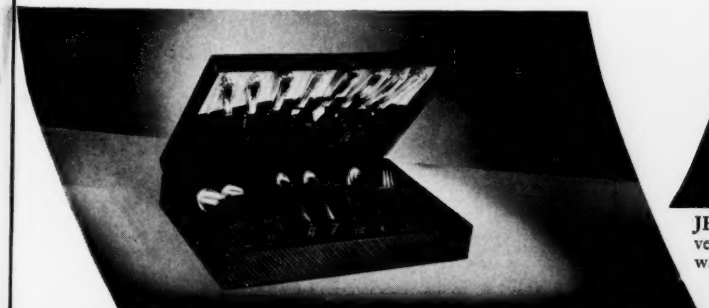
ZIPPER CASES for brush and combs, toilet articles, manicure sets, silverware, canvassers samples, etc. Compact and ingenious. Leather and imitation leather covered. Beautifully lined with moire, oil silks, leatherette, etc.



ANCY WOOD CHESTS Well constructed and popular priced. ake handsome settings that increase sales for innumerable products. ith or without trays. Furnished for silverware with tarnish-proof nings.



JEWELRY DISPLAY CASES in luxurious silk moires and velveteens. Effective settings for pendants, bracelets, rosaries, watches and rings. A wide selection.

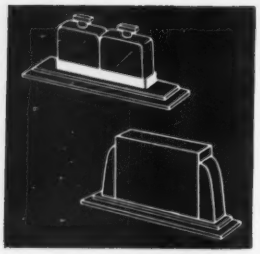


COVERED CHESTS—made with wood frames covered with embossed paper or leatherette. An excellent package for silverware, heating pads, manicure sets, and many other items requiring a strong container with display features.

EUREKA MANUFACTURING CO., INC.

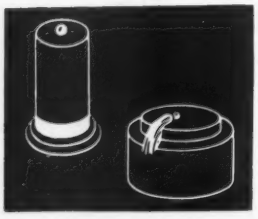
TAUNTON MASS.

XUM



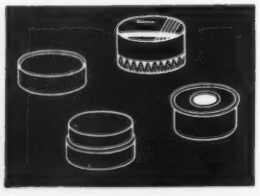
22. Left, shoulder style of face-powder box with curled edge top and regular paper covered drum.

Right, regular telescope extension base construction face-powder box, with drum built into base. Filled from bottom and sealed with plug and bottom label.

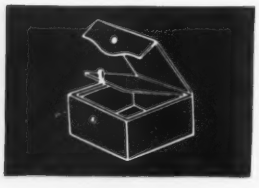


23. Left, glorified round box for perfumes; graduated extension base with band of velour over foil covering and plastic ornament on top; shallow shoulder on base to hold bottle.

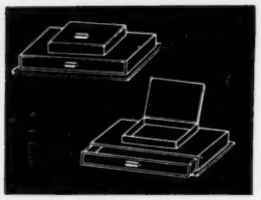
Right, enlarged base covered on top surface and died out to take shoulder, which runs straight down to bottom. With stamped metal top lacquered in colored design, plus silk tassel, an intriguing container for dusting powder, etc.



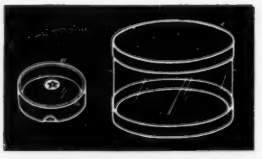
24. Left, perfume-box built around graduated and elongated base extensions with shallow (functional) shoulder to hold two bottles. Cover (right) well tailored, augmented by plastic pieces, gives harmony of container and contents.



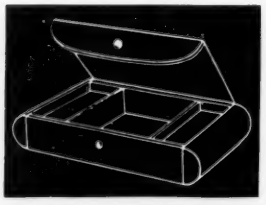
25. This container connotes character and quality of product; basically a base with recessed drum which is readily cut open for easy access to powder, yet snugly shut for travel, augmented by hinged cover with flange and snap button.



26. An adaptation of shell-style construction, back side closed, extension added; drawer or tray easily drawn out; plastic, wood, or metal pull. Regular base smaller, yet of proper dimensions. A suggestion for presentation of companion products such as men's wallets, keytainers, etc.



27. An adaptation where transparency and rigidity is desired. Left, smaller, with top and bottom transparent, and telescope base and lid construction. Thumbhole added for ease in opening. Right, larger, side wall is transparent, and base and cover are added for firmness and as closures.

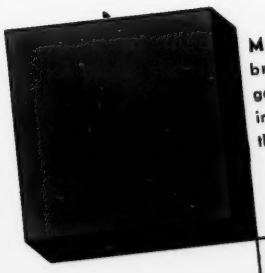


28. Well tailored basically, with long-wearing cover such as pyroxylin-coated fabric, and series of trays forming compartments. Wood ends, well covered, with flat firm covered lid with snap button on front flange. This container has great after-utility, and many products, wherein container is handy storage after purchase, do well to use such a sturdy, well-wearing type of box. More costly initial cost, yet well worth it in consumer good will for long-life product.

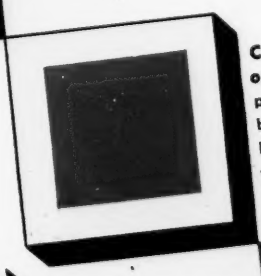
Ridgelo
CLAY COATED

A Tradition...Ever New

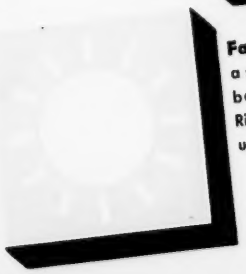
FROM YEAR TO YEAR GROWS THIS TRADITION FOR CREATING FINE BOXBOARDS TO DO PARTICULAR TASKS BETTER IN A PROFIT-BUILDING WAY



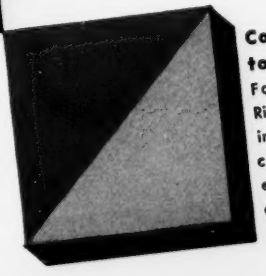
Metallic finishes—bright, smooth-as-silk gold and silver, greatly improved, a finer value than ever before.



Coatings for varnish or lacquers—easy to print, high finished boxboards with maximum lustre and true color value when varnished or lacquered.



Fast-to-light Colors—a standard in coated boxboards pioneered by Ridgelo for long-lasting, uniform folding cartons.



Coatings for halftones and solids—For specific designs Ridgelo coatings that lay inks like velvet . . . make clear-detail halftones even in small carton areas.

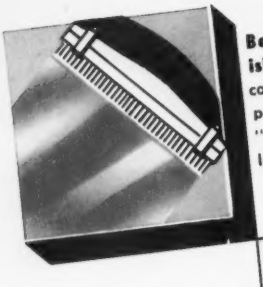
MADE AT RIDGEFIELD, N. J. BY LOWE PAPER COMPANY

Representatives: E. C. Collins, Baltimore • Bradner Smith and Company and Mac Sim Bar Paper Company, Chicago
H. B. Royce, Detroit • Zellerbach Paper Company, Pacific Coast • A. E. Kellogg, St. Louis

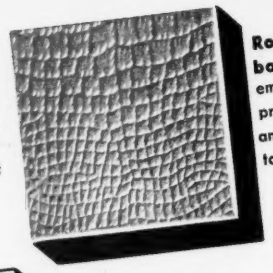
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Ridgelo
CLAY COATED

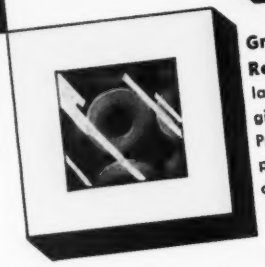
Fabricating Finer Cartons



Beautiful brush finishes . . . rich reflective coatings . . . brilliant and printable . . . a costly "cosmetic" impression at low cost.



Roll and Sheet Embossings—designs for embossing before or after printing to give a sturdy and exclusive appearance to folding cartons.

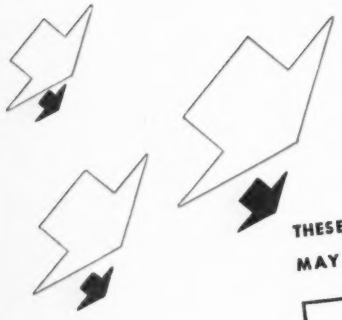


Grease and Moisture Resistant Finishes—laminating or coating to give the required result. Product preservation and package neatness often demand such treatments.



Extra rigidity and folding strength for heavy articles.

Non-bleeding colors for non-staining applications.



THESE AND MANY OTHER MERCHANDISING AND PACKAGING PROBLEMS MAY BE SOLVED BY RIDGELO RESEARCH AND EXPERIMENTATION.

Send for our stock sample book showing 16 regular colors, metallics and all thicknesses of White.

If you need a boxboard specialty of any kind, it should be worth your while to ask for Ridgelo.

MADE AT RIDGEFIELD, N. J. BY LOWE PAPER COMPANY

Representatives: E. C. Collins, Baltimore • Bradner Smith and Company and Mac Sim Bar Paper Company, Chicago
H. B. Royce, Detroit • Zellerbach Paper Company, Pacific Coast • A. E. Kellogg, St. Louis

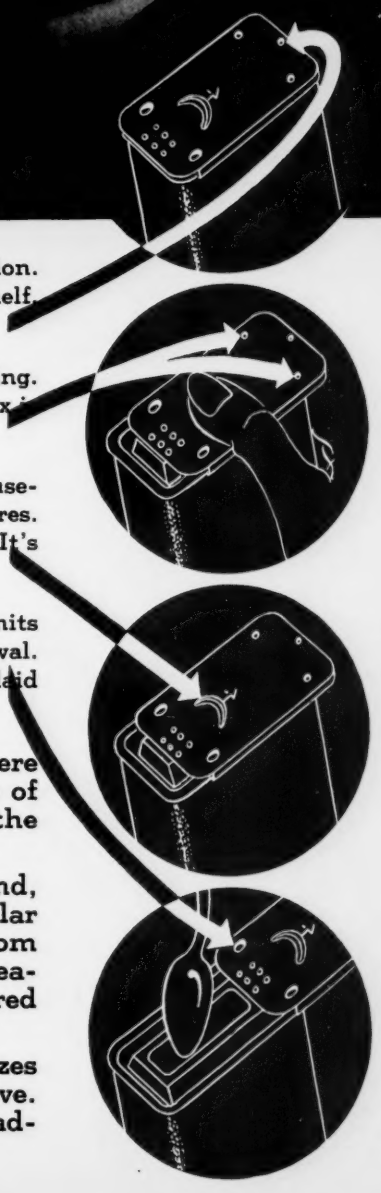
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At Last

A NEW SHAKER TOP CAN

WITH OUTSTANDING CONVENIENCE FEATURES!





*Positive snap lock holds top in closed and sealed position. Cans will not open during shipment or on the shelf. Product cannot sift through.

*Positive stop automatically positions slide for sifting. One flick of the thumb of the hand that holds the box is all that is necessary.

*Convenient fingernail grip. Ninety-five per cent of housewife package complaints assail hard-to-open closures. Housewives can have no complaint about this one. It's fool-proof and it always works.

*Full opening stop likewise positive in action. Permits insertion of full size teaspoon and leveling on withdrawal. The slide never leaves the package. It cannot be mislaid or lost.

Some old style shaker tops were good. Some were terrible. But none combined the advantages of sifter pouring with complete accessibility to the product for the consumer.

Now R. C. Can has developed a real one-hand, fool-proof shaker top for fibre cans of rectangular cross section. Without removing the top from the can, the consumer can insert a full size teaspoon to withdraw a liberal, accurately measured portion of your product.

This new R. C. shaker top can is available in sizes to meet your requirements. It's inexpensive. It's new. It offers heretofore unattainable advantages.

Write today for samples and full particulars.

R. C. CAN COMPANY St. Louis, Mo.

BRANCH FACTORIES

RITTMAN, OHIO — KANSAS CITY, MO. — ARLINGTON, TEXAS

Paper Containers for Liquids

The paper or fibre container for packaging milk and other products today occupies a recognized position in its field.

A number of advantages are claimed for the paper package in comparison with the glass milk bottle. Among these are the elimination of return packages requiring pick-up, inspection, washing, sterilization, etc. The paper package is substantially lighter than glass and—while subject to destruction under pressure—it does not present the breakage difficulties sometimes experienced when glass packages are fractured. The light weight makes for shipping economies particularly important under city traffic conditions.

From the retail store operator's viewpoint, the paper milk bottle eliminates the worry and expense of bottle deposits and refunds and makes for cleaner and more convenient package handling. Another advantage claimed for paper containers is the reduced inventory required since it is not necessary to invest in permanent or semi-permanent containers.

There are two basic types of paper containers—those delivered to the packager in fully erected form and those delivered in flat blanks and erected at the packaging plant. The fully erected types are manufactured complete in the container factory, sealed and shipped to the customer in dust-proof packages and are then filled and re-sealed in the customer's dairy, either on standard bottle filling machines or—in the case of some packages—on special machinery.

The second type is formed, set-up, completely paraffined, cooled and sealed in one continuous operation at the dairy itself. The package supplier here ships only printed and die-cut blocks which are made up on the paper machines in the dairy plant. Both types are, of course, capable of being printed in various attractive combinations of color.

The original cost of the paper bottle is less than that of the corresponding size of glass container. The cost per trip is a more debatable point involving a number of factors, varying, no doubt, under the different conditions under which various dairies operate. Among the factors to be included are relative shipping costs, in view of weight differentials, bottle breakage and loss factor, glass container cleaning costs, etc. The advantage of one container over the other cannot be stated in any general sense. It is, rather, dependent upon the operating conditions of the individual milk plant.

Paper "bottles" in their various shapes have lent themselves to a wide variety of uses. Among products so packed are sweet and sour creams, chocolate milk, ice cream, orange and other fruit juices, cheeses, sausage meats, beans, pickles, peanut butters, jams, jellies, preserves, cake flour, dessert powders, etc.



1. Reed Milk Bottle. **2.** American Can pre-fabricated rectangular containers.



3. Above: Sealright Nestyle moist food containers and prefabricated conical bottles. **4.** Below: Pavesco conical bottles and Excell-O-Pure-Pak rectangular containers. Both are prefabricated types.

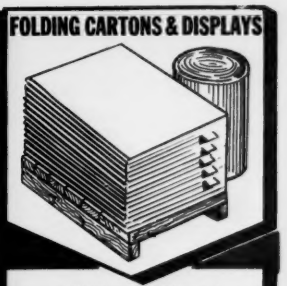


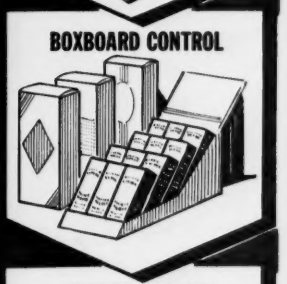
5. Sealcone paper milk bottles—assembled in the bottling plant.

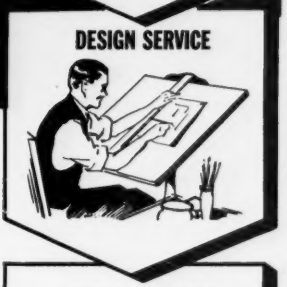


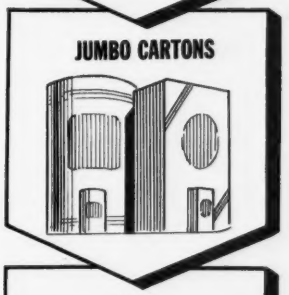
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ONLY the best is good enough for your package. By its appearance consumers judge the quality of your product, and your reliability as a manufacturer. Finest design, artwork, engravings..all these are important. But, even more vital is the selection of the finest Carton Board you can get! Its printing surface must glorify every minute detail of the costly other elements..its strength must give adequate protection to your product. You'll have a better looking, better selling package by specifying A.C.M. Clay Coated Carton Board. Ask us about it today, for your package.

A COMPLETE PACKAGING SERVICE

Although finer Clay Coated is our specialty, we can make any grade of carton board you specify, for folding cartons, counter, window and floor displays, or jumbo cartons. Our highly skilled designers will gladly create an entirely new or revised design for you at no extra cost. If you wish to test new products at low cost, short run silk screen cartons and displays are available. Check up also on our colored embossed Clay Coated laminated to corrugated, for gift boxes, and displays. You'll do well to discuss your packaging and display problems with one of our experienced field men. Write or phone our nearest office today.

There is no Substitute for

ACM *Clay Coated* CARTONS AND CARTON BOARD

Permanent and Re-Use Boxes

For certain types of package merchandise and under certain merchandising conditions, it is desirable to utilize containers having a high degree of permanence, beauty and re-usability. Such containers must perform many, if not all, the functions of an ordinary package. They must transport the merchandise, permit of its display, encourage its sale by their attractive appearance and frequently serve as a measure of quantity. But beyond all these things, they must be suited to the consumer's taste and fit for some place in some particular portion of the consumer's home.

A wealth of construction methods and a wide variety of materials are available to the packager requiring a permanent or re-use box. The effects which he may secure are virtually unlimited and his choice of materials, structure and effect will depend, necessarily, upon his merchandising problem and his price and sales set-up.

The discussion of each type, therefore, in the paragraphs which follow, should not be considered as a competitive presentation but, rather, as an outline of the salient features of each. The competitive decision must obviously vary with every special problem in accordance with the weight given to various features when a decision is to be made.

Molded Pulp Containers

Molded paper pulp containers are light in weight, water-proof, seamless and highly resilient. They may be produced in almost any conceivable shape.

The natural pulp gives the package an appearance of cleanness and freshness and is available in any of four standard colors—white, cream, buff and gray. Other colors can be obtained by introducing a dye into the pulp beater. Its slightly rough surface has a pleasant feel and its mesh design adds to its attractiveness for packaging, especially when used in combination with colored labels, wraps, etc. However, finishes can be applied either with flat dyes or lacquers of extreme lustre which effectively simulate porcelain or glass.

Molded pulp packages were originally most commonly seen in connection with imported Scotch liquors and are sometimes mistaken for papier-maché. However, pulp

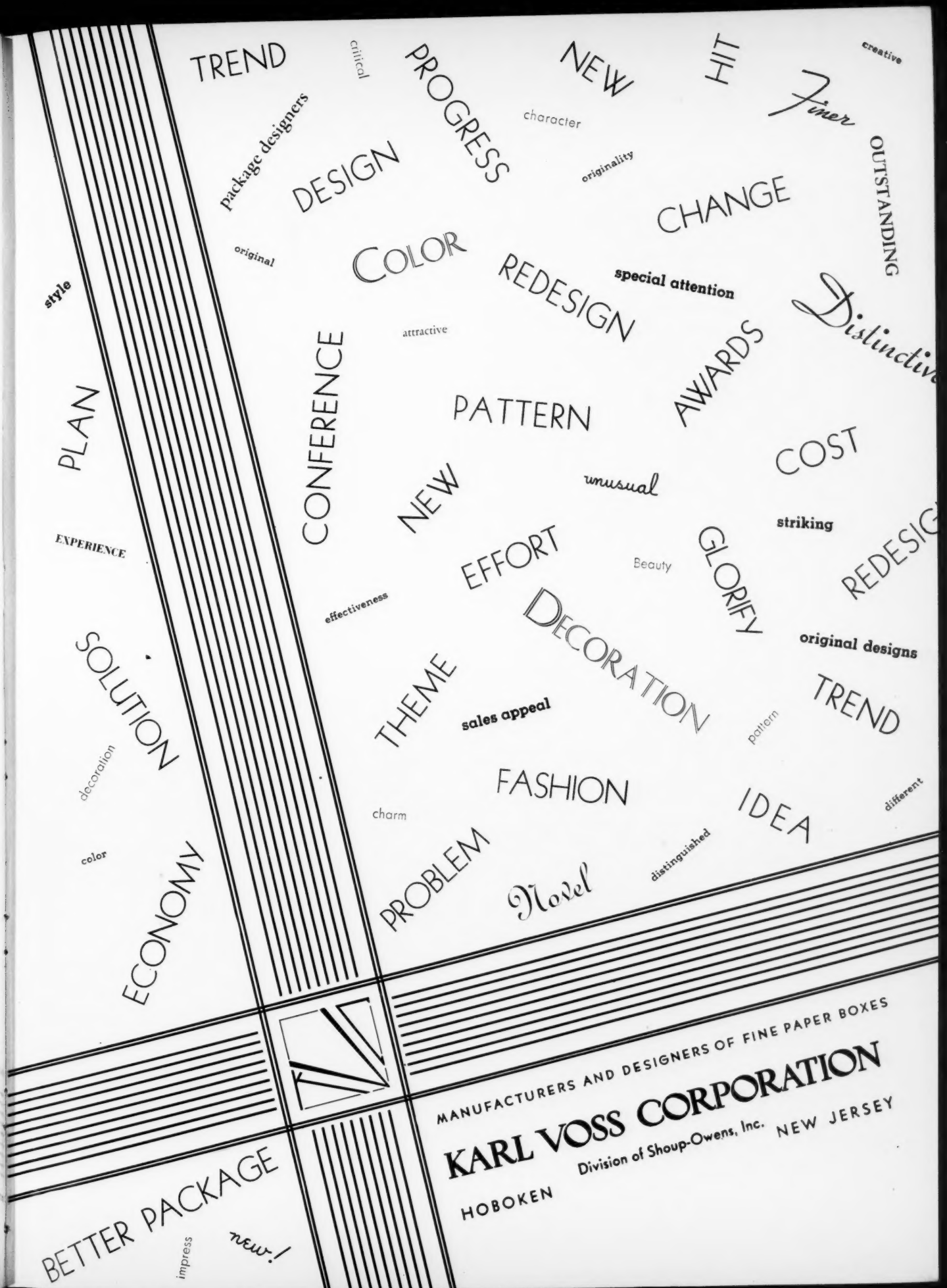
1. Wooden silver chests, the rearward one having a hinged lid and being finished in maple veneer. The lid on the chest in the foreground lifts off the package and is finished in high relief. Both boxes by C. E. Schunack, Inc.



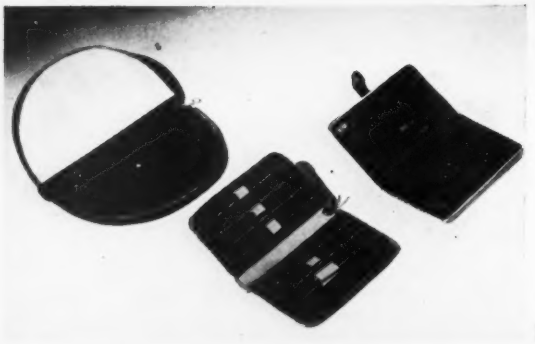
2. Two differing treatments for achieving quality effects on metal containers. The square box is covered with a heavy embossed foil material. The round container produces a Wedgwood pattern in pronounced relief. Boxes by The S. K. Smith Co.



XUM


TREND
critical
PROGRESS
NEW
HIT
creative
Finer
package designers
character
DESIGN
originality
OUTSTANDING
CHANGE
original
COLOR
REDESIGN
special attention
style
attractive
Distinctive
CONFERENCE
AWARDS
PLAN
PATTERN
COST
NEW
unusual
striking
EXPERIENCE
EFFORT
Beauty
GLORIFY
REDESIG
effectiveness
DECORATION
original designs
SOLUTION
THEME
TREND
sales appeal
pattern
decoration
FASHION
IDEA
different
charm
color
PROBLEM
Novel
distinguished
ECONOMY
MANUFACTURERS AND DESIGNERS OF FINE PAPER BOXES
KARL VOSS CORPORATION
Division of Shoup-Owens, Inc.
NEW JERSEY
HOBOKEN
BETTER PACKAGE
impress
new!

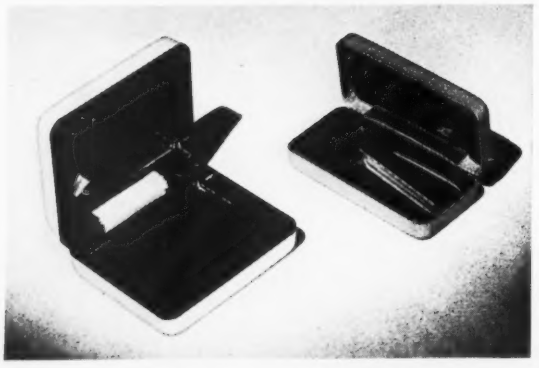
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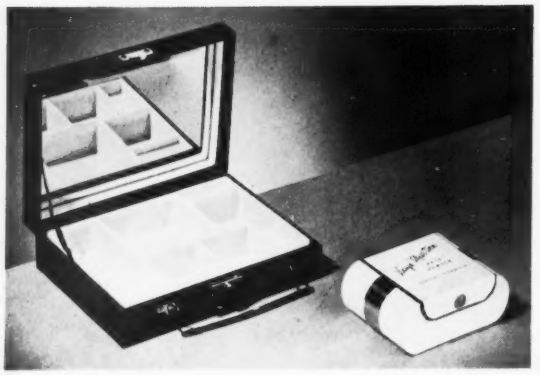
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4



5



6

3. Flexible leather cases with zipper or snap catch closures. Courtesy Weaver Manufacturing Co. **4.** Leather covered metal boxes. Courtesy Arrow Manufacturing Co. Inc. **5.** Leather covering over metal stampings forms the set boxes. Courtesy Farrington Manufacturing Co. **6.** Cosmetic chest and powder box combining leather, paper and wood. Photo courtesy of W. C. Ritchie & Co.

containers are not pressed into shape by plungers or dies, but "blown" in the interior of a mold, assuring accuracy.

The mold consists of a metal shell full of holes, lined on the inside with a fine metal screen, which accounts for the mesh design. When the double mold is closed, the exact amount of pulp required is introduced automatically in water solution and driven, by pressure, through the holes, leaving the pulp evenly compacted inside the metal screen. The mold then opens and the completed pulp object drops on a conveyor belt and passes into a dryer. After being dried, it has water-proof advantages without further treatment.

The preparation of molds ranges from an approximate minimum cost of $200 for the smallest and simplest shapes, to $1000 for larger packages and novelty containers and runs even higher for bust and statuette displays, where full advantage is taken of the possibilities for complicated shapes and decoration. Lettering, trade marks, etc., can be embossed or debossed on the container just as with other plastics.

Fancy Wooden Boxes

Since all wooden merchandising boxes are made either of all lumber or veneers or a combination of both, the manufacturer's first consideration is the kind of lumber needed for the job. The most widely used types are gumwood, poplar, basswood, cedar, mahogany, walnut, maple and redwood.

The finishing of a cedar box is a comparatively simple job, providing an excellent grade of shellac and varnish or lacquer is used. After one or two coats of shellac are applied as a sealing coat, each box must be hand sanded to remove the raised grain of the wood and then the varnish or lacquer is applied for the final coat.

The application of other finishes, particularly in colors, involves more detail. In applying a black lacquer, for example, a box must be first given a coat of lacquer sealer over which is applied a heavy body coater called surfacer or undercoater. Between each application of sealer and surfacer a hand-sanding operation takes place to provide a smooth surface.

One of the outstanding developments in the fancy wooden-box field is the rarewood finishes that are applied. These expensive-appearing finishes are exact reproductions of a wide variety of richly-grained woods that ordinarily are too costly to use in popular-priced merchandising containers. Usually a box made of gumwood is used to receive this finish, which is applied by special machinery designed for boxes only. After the necessary sanding operations and the required number of preliminary finishing coats are applied, the rarewood grains are applied, afterwards touched off by the final lacquer coats. These boxes are lined with various materials to enhance their beauty, such as imported papers, velvet, doeskin, leatherette.

One of the unusual developments of the wooden-box industry has been the use of acetate in providing tops of complete transparency. The combination of the two makes possible a display case or chest with considerable rigidity but without sacrificing the transparent

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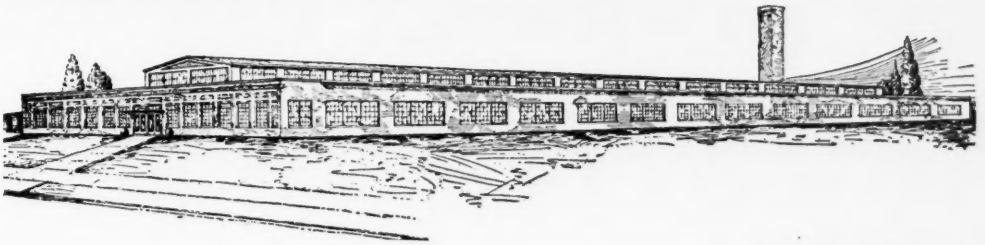
Craftsmanship

that is unexcelled in

paper boxes and

paper specialties

FERDINAND BUEDINGEN CO., INC.



ROCHESTER **NEW YORK**

feature. It provides the perfect box for the manufacturer who requires full display of his product, but with the protection that a closed container gives.

Leather and Fabric Covered Boxes

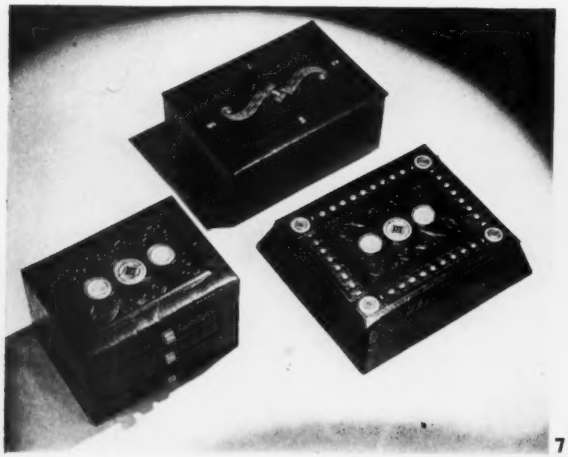
Leather, simulated leather, velvet, velveteen, brocades and similar materials are frequently used as box coverings. While the finest materials, such as high-grade leather, velvets, silks, and satins, are employed to a lesser degree than papers, their prestige and influence has been such that many paper boxes, and even some molded containers, are made with cover and even lining surfaces simulating leather and fabric effects.

Boxes of this general type are usually built over the frame of a special fibreboard (of wood thickness) or over a wood frame. Others are built over a metal shell, stamped out on punch-presses. The application of the coverings follows methods similar to those used in ordinary set-up paper-box making, the more expensive and exacting work being done by hand, while long runs are often done on machinery. Boxes are made in an extremely wide range of sizes and shapes, and while the rectangular and drum-type boxes predominate, a very large proportion of all boxes vary from these standardized sizes to include domed tops, ovals, octagons, etc.

A wide range of effects is possible when leather or imitation leather is used. Embossing and tooling processes are used to simulate antique tooled leather. Masks and color sprays are used to achieve colorful, decorative effects. Relief embossing is frequently used, both on the tops and sides of containers.

The extreme flexibility of fabrication, involving as it does no mold or die charge, permits their use on small initial orders to gauge a market. When large quantities are involved, the embossing-die charges are found to be relatively small. Fine leathers such as calfskin, morocco, and reptile and fine fabrics, including the higher-priced velvets and brocades, are frequently used for jewelry boxes where the size of the box permits the economical use of even these expensive coverings. Cheaper leathers such as sheepskin, cowhide splits, and the like are more often used for larger boxes, and while generally inferior in wearing qualities to some of the imitations, particularly pyroxylin-coated cloths and papers, more users find it advantageous to specify leather rather than a substitute because of the effect on merchants and consumers. When, however, extensive re-use is contemplated, and the more expensive leather and fabrics are eliminated because of cost, it is advisable to utilize one of the synthetic products.

7. Embossed and tooled utility boxes for service as re-use containers. Photo courtesy Durand Manufacturing Co. **8.** Boxes combining wood, metal and other materials. Photo courtesy Boynton & Co. **9.** Modern veneer effects with interior compartments and plastic or painted wood handles. Courtesy The Pilliod Cabinet Co.



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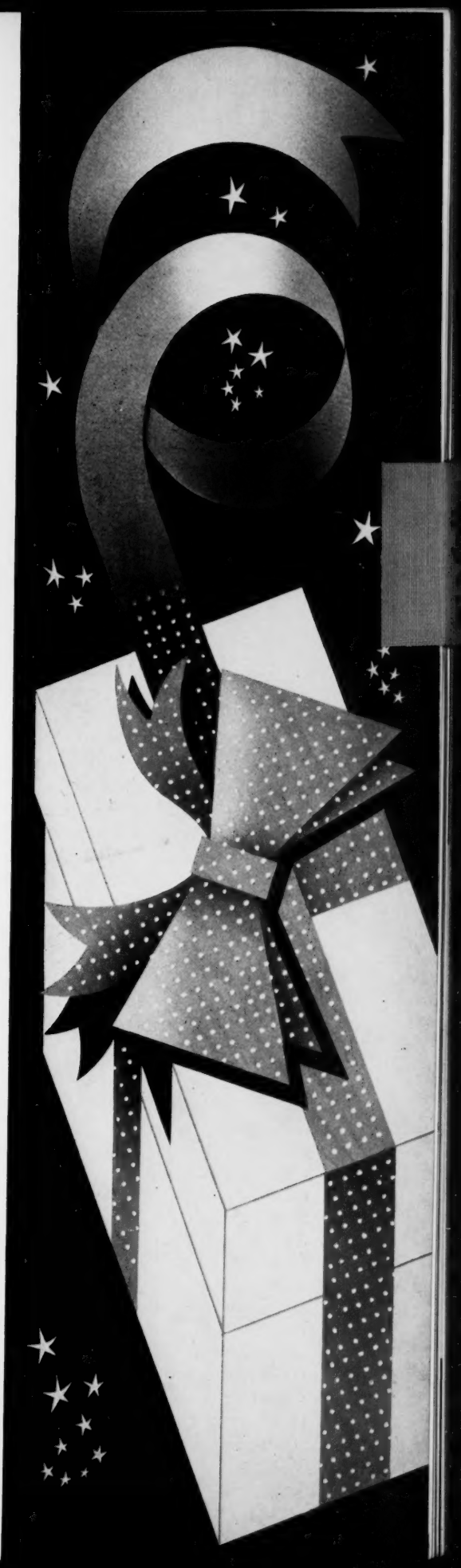
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WRAPPINGS AND TIES

SECTION THREE

Pages 99 to 146

FANCY "BOX MAKING" PAPERS
FOILS AND FOIL-MOUNTED PAPERS
GLASSINE PAPERS: TYPES AND USES
DISPLAY AND BACKGROUND PAPERS
WAXED PAPERS: TYPES AND USES
VEGETABLE PARCHMENTS: TYPES AND USES
TRANSPARENT WRAPPING SHEETING
PRINTED TRANSPARENT CELLULOSE
WINDOW-FACED WRAPS
LAMINATING AND COMBINING
DECORATIVE AND PROTECTIVE TISSUES
TARNISH RESISTANT PAPERS
LEATHERETTE AND FABRIC MATERIALS
DECORATIVE RIBBONS AND TIES
PACKAGE SEALING TAPES
SHREDDED PAPER AND CELLULOSE



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Fancy "Box Making" Papers

Fancy or box making papers include a wide group of uncoated, coated, metallic, foil and other types of papers designed for use primarily as box coverings, although also applied for other packaging purposes on occasion. While many types of these papers sprang originally from types developed as wall papers, the fancy paper industry has borrowed the best in the technique and tradition of many fields and has contributed many unique developments of its own as well. Thus, today, fancy box papers stand in a class by themselves and the industry which makes them represents a very specialized branch of the paper making and processing field, with a tradition, skill and technique of its own.

In the detailed descriptions and definitions which follow, the reader will find the answers to more specific questions that may arise regarding papers of these types. In general, it may be said that fancy papers provide a means whereby the box maker, the packager and the package designer may secure unusually varied effects in box decoration, at a relatively low cost.

Looking upon fancy papers as elements of design, it will be noted that their vast variety offers the designer an extended—if somewhat confusing—degree of leeway. He may select any one of dozens of textures, choosing those which will best achieve a desired effect or best establish a relationship between the product or the product's use and the package itself. His palette offers innumerable colors, fancy papers being available in practically every conceivable shade or combination of shades. As for design and pattern, he may select any one of literally thousands, ranging from simple one-color, undecorated papers to multi-color patterns, seasonal decorations, topical decorations, geometric designs, flower motifs, animal motifs, etc.

Private vs. Public Designs

Where his needs require and where quantities justify the expenditure, papers may be secured representing, in part or in whole, a completely private design. In some cases, stock papers may receive special private embossings which will thus differentiate them from all other embossed papers, although the base paper and the color may be of standard type. In other instances, every step of the fabrication of the paper, from the selection of raw stock, through coloring, printing or lithography and embossing, may represent an exclusive effort.

Paper costs vary within a very wide range. The cheapest grades of light-weight papers, designed for wrapping purposes and using an allover single color coating, may run as low as $4 or $5 a ream. The finest grades of domestic papers, such as some of the real wood veneers or some of the highly embossed, multi-color papers, may run as high as $30 or $40 a ream and papers may be secured at every price point imaginable between these two extremes.

The purchaser and paper user must simply remember the elements that go to make up paper costs. First among these, is, of course, the base paper. This may vary in quality, type and weight. Second is the number of processing steps to which the base paper will be subjected. Thus an ordinary coated stock will cost less than one which is coated and glazed or coated and embossed and these, in turn, will cost less than those which in addition are printed. Furthermore, the number of printing colors obviously will affect paper costs. An additional element affecting paper cost is that of popularity. Obviously, a stock paper which is very widely used, such as one of the conventional Christmas patterns, can be produced in longer runs and, hence, at lower costs than one of more limited appeal. There is a certain minimum run factor on all paper making machinery and orders below this point, on specially produced papers, will likewise cause costs to skyrocket.

Comparative Costs

Any element of private design, either in paper decoration or in embossing, will likewise tend to raise costs because of plate and makeready charges. For this reason, private designs can seldom be utilized, except by firms having a substantial or continuous demand for a given type of paper sufficient to warrant the expenditure in private plates and embossing rolls and sufficient to justify the mill's carrying a stock of such papers or making a special run of them periodically. The minimum practical quantity for private design papers, in most cases, is at least 100 reams.

While decorative effects are the primary factors to be considered in choosing a box making paper, a number of other considerations are well worth checking. Samples of the proposed papers should be submitted to the box maker in every instance and should be tested by him to determine just how they will work on box making equipment of various types. The conditions of use of a box should be anticipated and where subjection to much handling or to exposure to strong light may be foreseen, the packager will do well to check on the ability of the paper to resist staining, scuffing and fading.

Sample boxes, made up in exact size and structure contemplated for the production run, will frequently disclose the advantages or disadvantages of any proposed paper. Patterns which seem to be of suitable size, tone or color when viewed in-the-flat, may be found less suitable than others when judged, as they will be judged by the consumer, on an assembled box.

As in the purchase of all other packaging materials, the most satisfactory results can be achieved if the supplier

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is given all details as to the manner of fabrication and the probable use to which a proposed paper will be put. While the artist, designer or package user should, of course, retain the right to specify or select designs and colors, he may well limit this right by properly utilizing the advice of box makers and paper suppliers on the more technical aspects of fancy paper purchase.

DEFINITIONS

The following definitions apply to the various types and kinds of glazed and fancy papers:

I. Uncoated Body Stocks

The kind of paper, such as rag, sulphite, kraft, and ground wood, which is coated, embossed, etc.

A. Antique, natural finish.
B. Super calendered.

II. Coated

A. *Mat Coated:* Clay coated with brushes or other means as it comes from coating machines.
B. *Brush Finished:* Coated papers whose surface is polished by brushes.
C. *Plate:* Coated papers which are smooth finished by cold rolls through pressure in a stack calendering machine.
D. *Friction Glazed:* Coated papers whose surface is polished by heated rolls in a friction calender, friction being produced by the faster rotary action of the steel polishing roll against the slower cotton roll.
E. *Mica:* Paper whose coating material consists of ground mica crystals which gives a sparkling finished appearance.
F. *Flint:* Coated papers whose surface is highly polished by rubbing across the sheet with flint stones, a very slow but effective process.
G. *Waterproof:* Papers coated and then top surfaced with waterproof material, i.e., casein or gums or coated once with color heavily sized or mixed with waterproofing gums.
H. *Metallics*
   (1) Gold, Platinum, and Tints. Casein and pyroxylin coated with ground bronze (gold), aluminum, and copper, with casein and other gums or with pyroxylin lacquer; generally stack calendered to produce smooth and brilliant appearance.
   (2) Silver Glazed—"silver coated"—paper coated with "Argentine," a lead pulp which is dull grey in color; then polished to a silver finish by a friction calender.
   (3) Pyroxylin coated with lacquers in bright, dull, and pearl effects.
   (4) Flock—paper coated with varnish on the surface of which is shaken or blown finely powdered cotton, wool, rayon, or silk commonly known as "Velours."

III. Half Fine Metallic

Papers are produced by laying patches about five inches square of a thin copper or aluminum alloy on paper which has been coated with an adhesive. The patches are allowed to overlap so as to form a continuous metallic surface and the overlapping edges are brushed to remove any surplus.

IV. Foil

Papers are produced by the application to paper of a continuous sheet of metallic foil, usually tin, aluminum, zinc, or their alloys. The foil is adhered to the paper by the use of adhesive.

A. Silver-bright polished on one side in the rolling process; dull on its reverse side.
B. Gold and all colors are obtained by coating with gums or lacquers—very bright if coated on bright side, and "satin" finished if coated on the dull side.

V. Fancy Papers

Papers decorated with one or more colors in mottled, speckled, streaked or blended effects, or in a definite design in any of several processes as for instance: Surface printing by Kidder, wall-paper, or other rotary-printing machines; intaglio printing; print or ink embossing; topping, i.e., application of bronze or color to the surface of the raised portion of an embossed paper; two-toned by means of friction or heat embossing; or marked by means of design rollers running against a wet surface either coated or printed.

A. *Surface Printed:* A rotary process in which oil ink is transferred to the paper from a relief-pattern roller.
B. *Kidder:* Oil-ink printing from curved plates locked on a roller form and registering each impression as the paper runs beneath.
C. *Wall-paper:* Water-color printing in one or more colors from relief-pattern rollers, one for each color, registered in the running to make the complete design.
D. *Aniline* stained or printed or both, with rubber rollers and relief-cut patterns—generally with alcohol-gum colors.
E. *Intaglio or Rotogravure:* Papers printed with an engraved copper roller which has the pattern engraved into the roller by the photogravure process or by the use of a pattern mill. The ink, which may be water color, aniline, oil or lacquer, is wiped off the roller by means of a thin blade set crossways of the roller and the amount of ink controlled by the angle of the blade and the depth of the engraving.
F. *Print Embossed:* See "Embossed" below.

VI. Embossed

Papers having a pattern effect obtained as follows:
A. *Regular:* By means of a steel pattern roller and

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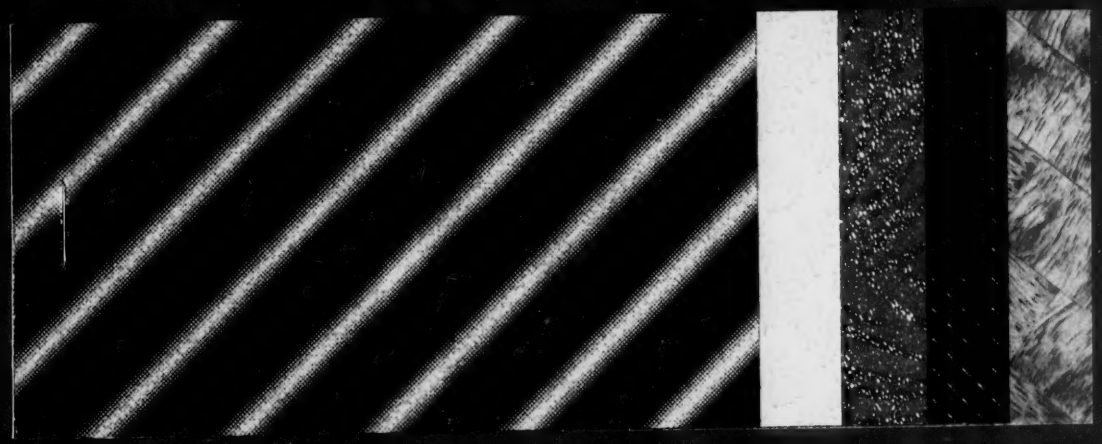
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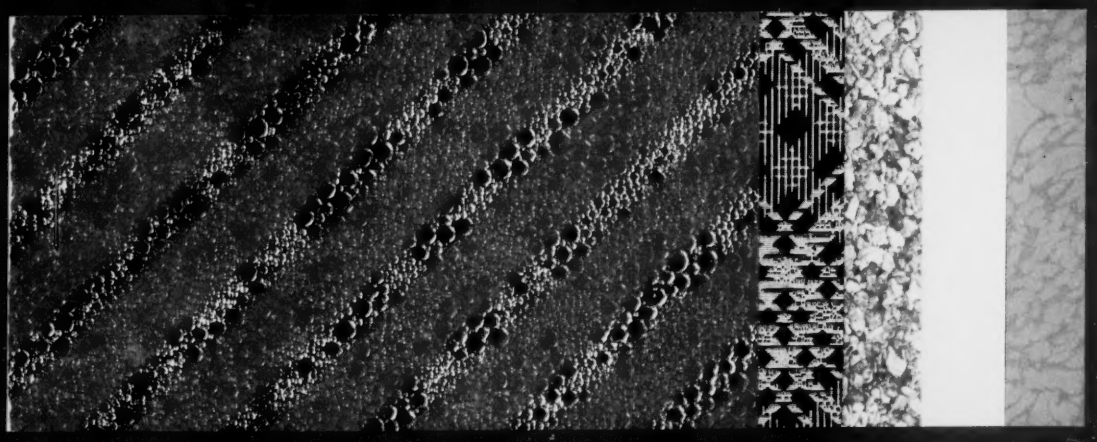
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Authorities on Box Covering Papers

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NEW YORK

624 SOUTH MILLER STREET
CHICAGO

187 OLIVER STREET
BOSTON

PRINTED ON TURQUOISE BLUE KROMEKOTE

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a paper-matrix roller mated together by wetting the paper roller—thus forming the embossing.

B. *Friction Embossed:* Paper embossed by pressing the pattern against a smooth paper roller run without gears, thus permitting a slight friction effect in the pattern contact—obtained with cold and with hot pattern rollers, the latter being bored and piped for steam heating. The combination of pressure and friction causes a deepening of color in the pattern area.

C. *Print Embossed:* A paper embossed and printed in one operation by means of the application of ink to the embossing pattern.

D. *Topped and Embossed:* Paper which is decorated in a two-toned effect by applying color through use of color roller to surface of the embossing.

E. *Spanished:* Decoration of an embossed paper by means of color applied to the entire surface of the sheet and then scraped off with a blade leaving it in the varied depth of the embossed surface; in varied tones of the decorating color.

VII. Cloth-Lined

Paper and cloth pasted and pressed together into a single sheet of material. Used for paper collars, envelopes, tags, children's books, etc.

DESCRIPTIVE TERMS

The following descriptive terms are commonly connected with box-papers, their sales use or qualities:

Embossing Designs

COMMON—Patterns in common use by many manufacturers of embossed paper. For instance: Skytogen and certain seal-grain moire, basket, Persian lamb, and swirl designs.

EXCLUSIVE—There are several hundred different embossing designs, in addition to the common ones, which have been originated or purchased by individual manufacturers who thereby own these designs exclusively. Such designs are frequently protected by registration at the United States Patent Office. Most manufacturers do not desire to copy others' designs, preferring to have exclusive designs of their own. The Glazed and Fancy Paper Manufacturers' Association, 902 Union Trust Bldg., Providence, R. I., maintains a registration bureau of these designs for the protection of its members and to answer inquiries from customers and users.

Fabric Designs—Printed designs in imitation of various fabrics, commonly known as "fabric prints." Embossing design in imitation of fabrics such as rep, linen, and similar materials.

Holly—Papers with a printed or embossed holly design in various combinations.

Leather Grain—Papers with leather grain designs which are either produced by embossing, ink embossing, or spanishing. Common examples are Alligator, Seal, Walrus, Caracul, etc.

Marble Agate—Papers with a design imitating polished colored marble. The design is sometimes a printed one but true marble agate papers are made by floating coloring materials in a viscous bath. Usually a small quantity of an extract made from ox liver is mixed with the colors in order to facilitate their distribution. The design is then created by combining the colors on the surface of this bath with a wooden comb or fingers. After the pattern has been made on this bath the floating materials are transferred to the paper by contact.

Moire—The name of a large class of embossing patterns which, after the manner of textiles of the same name, give a mottled or watered appearance.

Multi-color—Papers coated, printed, or originally made with many colors.

Non-fading—Papers that resist fading when exposed to sunlight. Some colors fade more than others.

Pearl—The well-known and very beautiful mother-of-pearl paper. The paper is coated by a special process with certain salts and then so treated that a crystallization process occurs which develops the mother-of-pearl design. This is a French manufacturer's product. American companies produce the same results with pyroxylin.

Ream—500 sheets is commonly used instead of the 480 which we learned in school. The standard size is 20 in. by 26 in. because these papers are most frequently sold in 26 in. rolls.

Rolls—A roll of plain paper usually contains three reams, but may contain less or more, depending on the weight or bulk of the paper reeled. A roll of embossed paper generally contains two reams; but if design is deep, one ream.

Silver—Papers coated with metallic substances which look like silver; sometimes called aluminum argentine, or platinum papers.

Swirl—Designs, both printed and embossed, which consist largely of circular lines or motifs.

Tarnishing—Discoloration of metallic papers caused by chemical action from contact or vapors.

Tissues, fancy—Tissue paper upon which has been printed a fancy design. Frequently it is embossed with another design. Largely used for gift wrapping.

Trade-mark Designs—Trade-marks printed or embossed upon the paper.

Weight—The weight per ream on a basis of 500 sheets listed in various sizes.

Wood Grain—Printed papers with designs imitating various wood grains.

Considerable delay is caused by customers sending in an order for a certain number of reams of a certain color. Such an order does not state what size ream they desire, what kind of paper is wanted for a body stock, or what kind of finish is needed. Orders for paper should state the quantity; whether in rolls or sheets; size of rolls or sheets; manufacturer's sample number if possible; otherwise full details regarding the color, finish and body stock required.

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1. You can thumbtack it easily to wall or counter.
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3. Built-in cutter cuts instantly to length.
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F.C.C.
TWO-TONE RIBBON

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F.C.C. Ribbon, made of "Cellophane," comes in widths ranging from 1/12" to 10". F.C.C. Cord made with "Cellophane" is available in various gauges from a thread to a rope. All ribbons are greaseproof and dirtproof. Special moistureproof ribbons or cords may be made for any purpose.

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F.C.C. Metal Sheen Ribbon: A three-fold "Cellophane" ribbon available in fourteen brilliant opaque colors. Iridescent and lustrous.

F.C.C. Cord: Sparkling, soft and durable. A specially treated core assures greater pliability and greater strength to F.C.C. Cord. Available in sixteen solid and two-toned brilliant colors.

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Fibre Cord Co.

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Foils and Foil-Mounted Papers

Metal foil, as the name implies, consists of thin metallic layers of aluminum or other metals. It is available in sheets, rolls or fabricated forms, unbacked or backed to various types and weights of papers; plain, embossed, unprinted or printed in one or more colors.

Metal foils combine a number of unique protective features. Their opacity and their ability to resist the passage of heat has induced their wide use in the packaging of products easily susceptible to moisture, such as potato chips, peanuts, etc. Heat reflection has also served as one of the reasons inducing the use of metal foil for the wrapping of chocolates and similar products.

Metal foil has a high resistance to moisture vapor passage and is therefore utilized frequently, both when it is desired to keep moisture inside the package and when it is sought to prevent the entrance of moisture into the package. Thus such items as cake mixes, tenderized prunes and dry milk powder are frequently found in packages constructed, in whole or part, of metal foils.

Much progress has been made, in recent years, in the development of various combinations of foils with other materials such as waxed papers, glassines, grease-proof krafts, bonds, manilas and cellulose sheetings. These linings serve to reinforce the metal foil and facilitate its fabrication into wrappers, liners, cartons, etc.

Metal foil bags lined with glassine, bond, greaseproof or kraft papers have come into increasing use for such items as potato chips, peanuts, coffee, etc.

Metal foil wrappers having a heat-seal lacquer coating which enables them to be securely sealed or applied in the form of a tight wrap are also widely used.

Foil-mounted cardboards have come into more extensive use with the development of processes for the printing of metal foils in full color and fine design. For general use, foil is ordinarily mounted to a white double sulphite-lined newsboard. Single- or double-manila-lined newsboard is also widely used, but for some purposes is not desirable because of its color.

Much progress has been made in printing on metal foils, especially in the use of gravure printing and color photography reproductions.

THE COMMON USES AND GRADES OF OIL

Commodity	Backing	Adhesive
Box covers	Soft paper	Solid glue
Chocolate bars	No backing	....
Chewing gum	Waxed paper	Wax
Candy bars	Waxed paper	Wax
Candy mints	None (plain foil)	....
Cartons	Paper board	Glue
Tea	With and without paper	....
Cakes	Waxed paper	Wax
Cheese	Plain or transparent paper backed	If paper-backed, wax or cement
Yeast	None (plain foil)	....
Ice-cream bars	Waxed paper	Wax
Cut tobacco	Waxed paper	Wax
Cigarettes	Bond paper	Glue lined
Box liners	Plain or paper-backed	If paper-backed, glue lined
Soap	Waxed paper	Wax
Photo films	Waxed paper	Wax
Corsage stems	None (plain foil)	....
Bottlenecks	Tissue paper, if any	Cement, if tissue paper-backed
Bottlecap liners	Plain or paper-backed	If paper-backed, colorless cement
Window decoration	Plain or paper-backed	Glue
Butter wrappers	Paper	Cement
Meat wrappers	Waxed paper	Wax
Gift wrappers	Bond paper	Colorless cement
Typewriter ribbons	Wax paper	Wax
Bonbon cups	None (plain foil)	....
Labels	Bond paper	Colorless cement
Vanity boxes	None (plain foil)	....
Milk-bottle caps	None (plain foil)	....
Chocolate buds	None (plain foil)	....
Insert for transparent wrapper	Wax paper	Wax
Liners or covering for paper cans	Plain or paper-backed	If paper-backed, cement

1. Printed foil cartons. Courtesy Reynolds Metals Co. Inc. **2.** Lithographed and embossed foil labels. Courtesy Fleming-Potter Co. Inc. **3.** Foil bread wrap. Courtesy Aluminum Company of America.

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— fancy box coverings, Diafane, special
over printed wraps, and a host of other
you to select the one exactly right for your
and its specific requirements. But don't f
of your package ——

THE INSIDE . . . The outsi
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depends on their opinion of the conten
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Riegel Papers are used by the coun
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RIEGEL PAPER CO
342 MADISON AVENUE

XUM

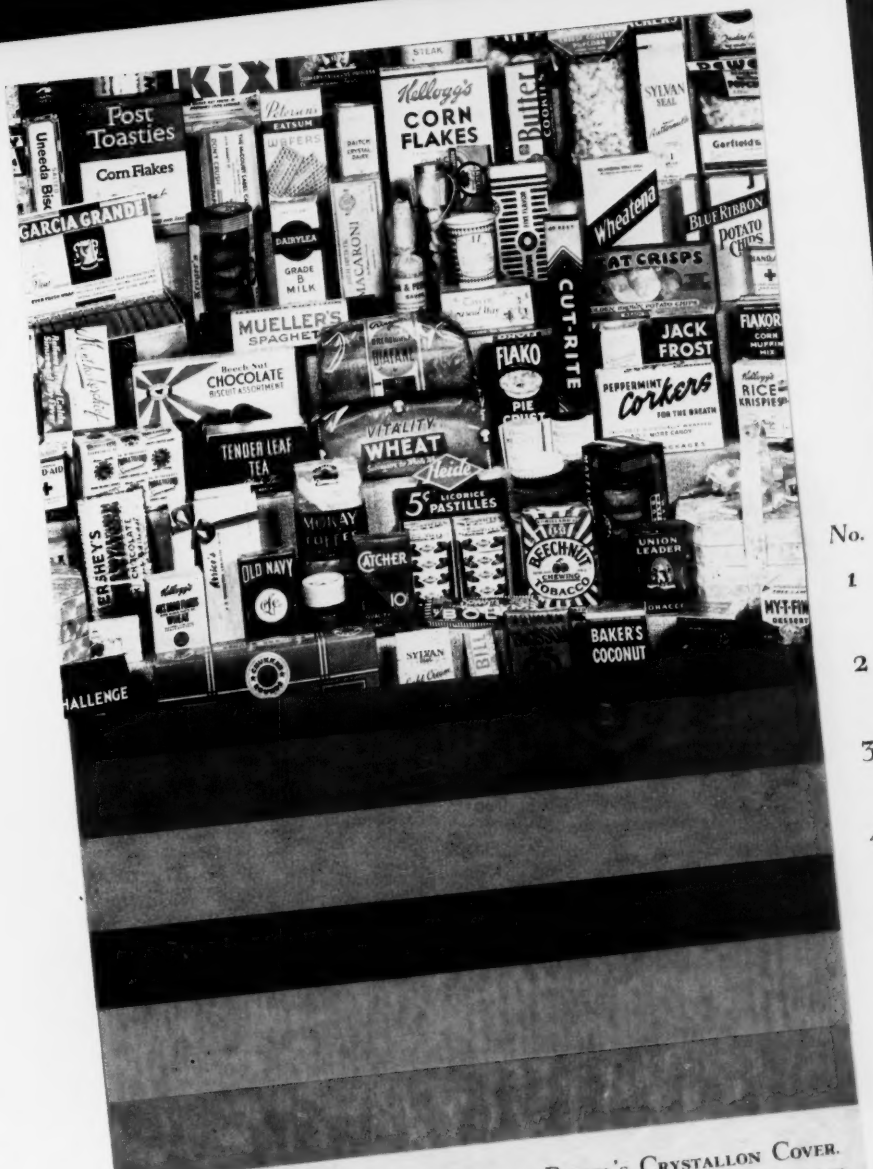
RIEGEL PAPERS

. . It's the outside of your
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fane, special waxed papers, all-
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information and investigate our abil-
e a package that will combine appear-
uction efficiency and economy.

PER CORPORATION
ENUE NEW YORK, N. Y.



INSERT IS RIEGEL'S TUFWITE. TIPON IS RIEGEL'S CRYSTALLON COVER.
IDENTIFICATION *of* SWATCH PAPERS UNDER TOP LEAF

XUM



but only its taste can make the diner come back

"Sell the sizzle and not the steak" has become a popular catch phrase, and one with a good deal of merit perhaps. But if you're trying to apply it to your own packaged products — don't forget that a diner may buy a "sizzle" once, but if the steak isn't tender he'll never come back again.

Give your package just as much "sizzle" as you can possibly afford, but if the product within needs any form of protection whatever — be sure to remember that volume business is built on repeat sales, and repeat sales depend on the buyer's opinion of what he finds inside the package. All the sizzle in the world won't bring repeat sales to products that have become soggy, dried out, greasy, mouldy, rancid, broken, or otherwise deteriorated by improper or insufficient protection.

Packaging papers from the Riegel Mills are now providing protection, production efficiency, economy — and sometimes the "sizzle" as well — for countless of the nation's leading manufacturers. If you also need some form of product protection, we sincerely believe that you can solve your problem with one of our 130 standard papers. If not, we are well equipped to economically produce a "tailor-made" paper for you. Write us today.

RIEGEL PAPER CORPORATION
342 MADISON AVENUE NEW YORK, N. Y.

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Glassine Papers: Types and Uses

by FLLOYD TRIGGS*

Inasmuch as the average glassine mill and waxing plant produces well over 100 varying grades of paper, it is simpler to treat glassine from the standpoint of general use. These grades range from highly transparent, lacquered glassine outer wraps to an opaque white sheet made for lamination to board and for label use on food or other products containing grease. In addition to these standard grades—waxed, lacquered, embossed, colored, printed and plain—there are a host of special types, many of them made to fit the specific packaging requirements of just one manufacturer. The latter's reason for selecting either a special or standard glassine may be due to a desire for some form of protection, for economy, for decoration, for production efficiency, or for any combination of these advantages.

From the angle of general use, all these papers fall in four broad groups: outer wraps, carton liners, bag stocks and industrial specialties. Though varying greatly in appearance, the glassines found in each group possess the common characteristics of high grease-resistance, cleanliness and moderate cost. When waxed or lacquered, all glassines become decidedly moisture-proof and self-sealing through the application of heat. In addition, special adhesives have recently made it possible to glue waxed glassine in either bag or carton wrap without the necessity of providing a dry strip for this purpose.

In the first division—outer glassine wraps—a high degree of transparency is usually found. The papers in this group are known in the trade as "Super-transparent Bleached Glassines." They are designed to work rapidly on packaging machinery, to print with facility on ordinary presses, and to provide a neat, tight seal with ordinary adhesives. As a carton wrap, this group of glassines offers approximately 90 per cent of full transparency. When waxed it becomes highly moisture-proof, self-sealing, and the transparency is still further increased. Waxed transparent glassine has found an extensive market in the baking industry and elsewhere to a somewhat lesser degree, as a change from waxed sulphite and other

* Advertising Manager, Riegel Paper Corp.



1. The remarkable diversity of applications of glassine paper may be seen by an examination of this photograph. Note the variety of package forms and of package groupings into which the packages here shown fall. Photo courtesy Riegel Paper Corp.

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2. Lacquered glassine used as an inner bag for cartoned cheese pop corn. The bag is heat sealed. Photo courtesy The Menasha Products Co.

waxed papers having lower moisture protection and less resistance to handling.

From the standpoint of volume and variety of grades, the second division—carton-lining glassine—is of greatest importance. In this group are found both bleached and unbleached glassines, the latter tending toward a light gray or an amber color. While transparency is of little importance, grease- and air-resistance are kept at a high point and the moisture-proof quality of the waxed liners is particularly developed. Many manufacturers have found it economical to have special glassine liners developed to meet the specific needs of their product or to provide maximum efficiency on their lining machines. Aside from these individually produced glassines, the unbleached grades find general use in cracker cartons, coffee bags, and in lamination with boxboard. The bleached liners are used for cereal, prepared flour, cocoanut, gelatin, candy, and an endless number of other products requiring a sift-proof, sanitary, grease- or moisture-proof (if waxed) liner of low cost. A recent development in this field has been the increased use of such liners laminated to the boxboard before the carton is formed.

In the bag and envelope industries two general types of bleached glassine are prevalent. These are known as "Super-transparent Bleached Glassine" and as "Regular Bleached Glassine." In the manufacture of bag glassines, special attention is given to strength and pliability, while transparency varies with the cost of the grade used. The baking industry is perhaps the largest user of glassine bags but the number of other products so packaged—potato chips, grated cheese, collars, novelties, etc.—is legion. Present-day bag machinery has kept pace with the rapid developments of the lining and wrapping machine manufacturers and many types of glassine bags can now be made at a speed of 700 per minute. Bag glassines are made to print well with both oil and aniline inks, and the printing of these bags is normally a part of the manufacturing process. By a process of waxing on one side with a dry strip for gluing, a moisture-proof bag is produced, although special glues may be used to eliminate the dry strip if desired. Two light-weight glassines, laminated together with wax, form a special bag-paper used where exceptional moisture-protection is of definite advantage in the preservation of the contained product.

The fourth division—industrial glassines—must be adapted to cover a multitude of little known but widely used special papers. Ball bearings are wrapped in a special heavy-weight amber glassine, chemical packaging requires many technical qualities and other grades are used in electrical condensers, photo engraving, etc.

Glassine papers have found application in the frozen food industry, in a number of cases. For instance, a specially plasticized and laminated glassine (heat seal, lacquer coated), is widely used for corn on the cob.

Many of the papers mentioned above are prepared in special colors and with embossed or printed designs. The colored glassines make economical and attractive candy cups, and pads of colored corrugated glassine have reduced breakage and added to the appearance of many packages. In commenting on these special industrial glassines, mention should be made of lacquer-coated glassine of high shine and perfect transparency. Several papers of this type are now made and finding rapidly increasing usage not only for industrial purposes, but for bags, carton wraps, tobacco, baked goods, etc. The best lacquer-coated glassines are highly transparent, odorless, heat-sealing, glossy, moisture-proof, grease-proof and readily printable.

It is obviously difficult to treat with such a complex group of papers in a few paragraphs. The glassine mills, however, are located at central points throughout the country and employ large laboratory research staffs, the services of which are available without charge to package designers or manufacturers. With the modern glassines available today, it is no longer necessary to adapt your package, product or machinery to fit the packaging material for the latter can be adapted to fit your specific needs—a simpler and more economical production procedure.

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6 OUT OF 66 ANSWERS TO PACKAGING PROBLEMS

Actually, there are several times 66 ways in which you can buy Alcoa Aluminum Foil. The different combinations of gauges, colors, embossings, backings, and other variations are too numerous to count. The important facts are these:

1. If your product can use Aluminum foil, you can get the exactly right type in Alcoa Foil.

2. Alcoa Aluminum Foil preserves original freshness because it is impervious to moisture, gases (air) and light, and reflects radiant heat. It is non-toxic, odorless, and grease-proof.

3. Compared with foil made of heavier metals, it gives far greater covering area, pound for pound; has higher tensile strength; folds without cracking; works well with either machine or hand packaging methods.

4. At the point of sale its sparkling clean-cut beauty makes a striking package, high in attention value. Does not soil easily. Embossing, lacquering, and printing in any colors may be used to enhance its natural beauty.

5. You can use Alcoa Aluminum Foil in a variety of forms, for tight wraps, bags, envelopes, folding cartons, linings or coverings for boxes or cans, and many special packaging applications.

6. For assistance in working out your packaging problems, write ALUMINUM COMPANY OF AMERICA, 2150 Gulf Building, Pittsburgh, Penna.

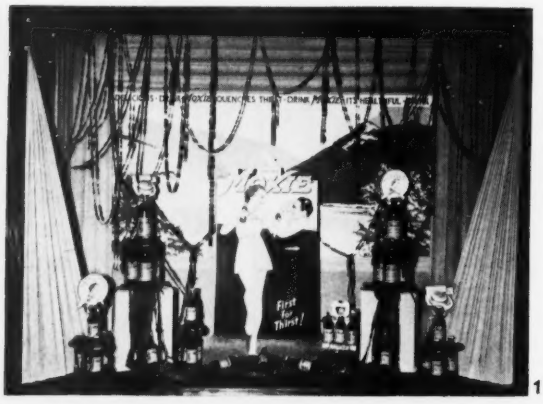
ALCOA ALUMINUM

ALCOA ALUMINUM FOIL

Display and Background Papers

Many firms, who are always on the alert for improvements in display technique, have become very much interested in the possibilities of display backgrounds which are more than mere decorations—backgrounds that carry still further the spirit of the advertising message represented by the lithographed or printed paper or the wood or metal window display.

Ever since the development of crepe paper as a decorating material, the importance of the window background has been recognized. Not only has crepe paper been used to form an attractive setting for lithography, but it has added the strong appeal of color to the display. Another undoubted reason for its popularity is the fact that by decorating the entire window, the overall size of the display as an advertisement is greatly increased. People can see it farther and, by skillful use of crepe paper decorations, the design is made to lead the eye to the display and to the merchandise on display. Crepe papers are widely utilized because of the ease with which they may be handled, their relatively low cost, and the wide range of colors and varieties in which they may be had. The use of crepe paper in conjunction with lithographed or printed displays provides an unusual degree of flexibility and makes it extremely easy for the window-trimmer to adjust his display to fit various sizes and types of windows.



1



2

1. Panoramic background for a lithographed display with side and ceiling drapes of crepe paper. 2. Printed crepe valance combined with decorative crepe drapes. Photos courtesy Denison Manufacturing Co.

As an inexpensive, colorful and versatile decorating material, crepe paper is widely utilized, but there are a lot of other papers which are favored—plain or embossed metal foil, imitation leathers, papers bearing photographic reproductions of textiles, wood grains and other textured surfaces, flexible corrugated papers and some types of fancy box papers where the design lends itself for use in display.

A number of new decorating materials and processes have been developed which open up entirely new fields for the designer of displays who considers the entire window his unit of design. Efforts to make the window background carry out the central theme of the lithographed or printed display are not new. Backgrounds in warm or cool colors, to harmonize or to contrast with warm or cool colors in the display, have been used very effectively. Such an item as crepe icicles has frequently been utilized for the same purpose and entire scenic effects have been built up, although the latter have not always been considered completely practical from an installation standpoint.

With the new materials and processes which are now available, however, an entire new field of decoration has been opened up and the technique of complete advertising tie-up has taken another step forward. Among the new processes is an inexpensive printing process which can print a single design up to 7 ft. long and over 3 ft. wide.

This is a continuous-roll process and since the design need repeat only every 7 feet, it is possible to use it in longer lengths and to get a complete panoramic effect across the background of even the widest window. The 7-ft. repeat is so long that the fact that the design repeats at all is not obvious from anything but searching study. The material printed may be either a very heavy weight and almost opaque crepe paper, or this same material may be furnished with a flexible corrugated backing which greatly increases its adaptability to window treatment and makes possible structural effects.

Since the reproduction is of the poster type, printed backgrounds produced by this process do not compete with the lithography for attention, but, rather, serve to complement it and to offer a pleasing contrast with it. A particularly effective application of this form of background is a printed scene representing the general atmosphere or situation in which the product on display would be used, with the lithography representing a close-up of the product in actual use.

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Sylvania Cellophane
SINCE 1929
Sylvania Cellophane
SYLVANIA INDUSTRIAL CORPORATION
SYLVANIA



3



4

3. Flexible corrugated material as used in conjunction with crepe papers. **4.** Flexible corrugated pylons to support merchandise. Photos courtesy The Reyburn Manufacturing Co.

Gaining favor among large buyers of window display is the advertising valance which is printed by the same continuous-roll process as the specially printed panoramic background. Here again, the advertiser has an economical display material which is an active advertising medium as well as a decorative medium. Here again, the effectiveness of his lithography is increased with the increase in the size of the unit of display.

Panoramic papers, utilizing color reproductions of either drawings or photographs, have been very effectively used within the last year and the number of these papers available has greatly increased. They are usually made in two- or three-color effects, in rolls about 4 feet in height and 25 feet in length, and are supplied in various thicknesses of stock.

The flexible corrugated decorating materials have likewise become exceedingly popular over a period embracing most of the last decade, but it is only recently that they have been available in a wide variety of new surface treatments. The material is now also used "wrong side out," as it were. That is, the corrugated side of the material instead of being the face, is the reverse and new types of decorative papers and printed effects now form the surface, with the material keeping all the flexibility and structural advantages which have long been recognized. Thus the corrugated decorating material is now available in very realistic imitations of marble, wood and cork and in the popular metallics as well as solid colors. These novelty finishes, in particular, are especially useful to the designer who wants to carry the advertising tie-up beyond the lithography itself and into the background decoration.

For the convenience of those who build their own displays, one manufacturer, at least, provides a corrugated paper with outline letters and numerals backing to permit of easy use of the material in forming signs, slogans, price tags and similar display units.

Because of the structural advantages of the corrugated backing material, they may be made into pedestals for supporting merchandise which also tie up with the general advertising theme. One type utilizes an unusual wire-stiffening method to hold the sheets erect, when bent into three-dimensional effects, without the use of frames or easels. Pedestals of imitation wood, for example, might be used in a floor wax display or as a tie-up with a tool display. Pedestals of marble fit in well with the very luxurious effects sometimes used to show cosmetics and even pedestals designed to look like birch stumps have been used in connection with a lithographed card in which birch trees were part of the design.

Corrugated display backgrounds, when supplied in conjunction with lithographed or printed displays, have a definite advantage in ease of packing in shipment since they may be rolled into a relatively compact form without damage to the display. The corrugated materials are frequently used in conjunction with stenciling and air-brush work, particularly where the quantity required is comparatively small and where the size of the display would make plate-cost for printing and lithography prohibitive.

In addition to these specialty papers on the corrugated backing, there are a number of new and beautiful finishes which may either be draped or used to cover flat surfaces. Outstanding among them is a sparkling material, the surface of which is composed of fine particles of mica and which is particularly spectacular under artificial light—either white or colored. This material suggests coldness so well that it has been used with particular effectiveness in a wide variety of displays in which the cooling idea is dominant. Displays featuring refrigerators, soft drinks, summer clothing and even vacation travels, are among those to which the material has been effectively applied.

These new decorating materials, in the aggregate, form a very useful kit of tools for the designer of displays who has watched the evolution of the tie-up between copy idea and illustration to the highly developed state in which it appears today. The ingenuity of the designer seems now to be the only limit to the possibilities of the display background as a part of the complete advertising theme. Today he need no longer rely upon makeshift materials or tedious hand-made decorations.

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400 DIFFERENT BOX PAPERS STOCKED BY MIDDLESEX

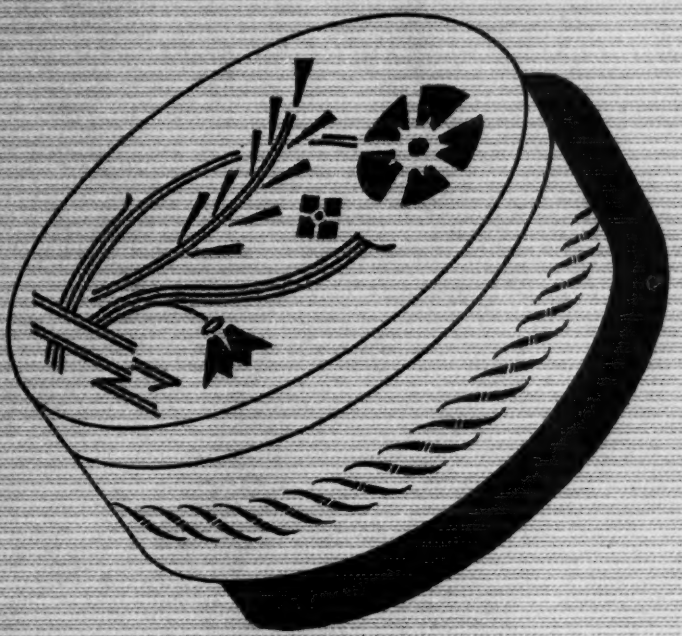
for SAME-DAY SHIPMENT



A FEW OF THE 400 MIDDLESEX PAPERS CARRIED IN STOCK

AVOID COSTLY DELAYS, specify Middlesex Stock papers. The large mill stock is supplemented by branch warehouse stocks of popular items.

Special papers made to order promptly.



FOR YOUR CONVENIENCE ALL MIDDLESEX OFFICES CARRY A COMPLETE LINE OF SAMPLE SHEETS 20 x 26.

MIDDLESEX PRODUCTS CORPORATION

INCORPORATED IN MASSACHUSETTS 1866

MILL *and* HOME OFFICE
Cambridge, Massachusetts

DIRECT MILL BRANCHES CARRYING STOCK, *New York, Philadelphia, Chicago*

A BRIEF DESCRIPTION OF MIDDLESEX PAPER SERVICE

Mill Stock Papers:

FRICTION GLAZED, Standard and Heavy Weights, White and Colors.
PLATED LABEL, White and Colors.
EMBOSSED, Semi W.P., Black and Colors.
WHITE EMBOSSED, in a wide range of modern embossings.
VANIMODE (Lustrous Mica Coated), in 19 "Colors of Fashion".
GALAMODE, 2 Tone Embossed on Solid Color Paper.
METALMODE, a Wide Variety of Metal Coated Papers, Gold, Silver and Colors.
FADE-LESS FOILS, Pure Aluminum Foil, Paper Backed, in 8 flashing colors.
FOLDING CARTON STOCK, .016 in Gold, Silver, Platinum.
RICHMODE DUPLEX, Green-Black, Gold-Black and other combinations.
UTILITY, a Low Cost Line of Popular Box Papers, Plain and Embossed.
CLOTH LINED PAPERS, for Strong, Durable Tags, Labels, Sample Folders, Covers, Swatch Cards, etc.

Middlesex Branch Warehouses

carry a wide selection of popular items:
BLACK, WHITE AND COLORED EMBOSSED PAPERS:
FRICTION GLAZED, 2 weights, in large range of colors; also Plated Label;
METALMODE Papers, in Gold, Silver, Platinum.
Also Special Papers For Individual Customers.

Special Making Orders:

MIDDLESEX runs thousands of reams of special papers to customers' individual specifications: Special Shades, Coatings, Designs, etc. Customers' materials also processed on commission: Embossing, Coating, Combining, etc.

GLAZED AND FANCY PAPER MANUFACTURERS' ASSOCIATION MEMBER

MIDDLESEX PRODUCTS CORPORATION

INCORPORATED IN MASSACHUSETTS 1866

Mill and Home Office
111 Putnam Avenue
CAMBRIDGE, MASSACHUSETTS

MIDDLESEX PAPERS

Direct Mill Branches Carrying Stock
NEW YORK: 41 Park Row
CHICAGO: 308 W. Washington St.
PHILADELPHIA: 401 N. Broad St.

This Insert Platinum .010 Cover, Embossed in the New Middlesex Twill Pattern

XUM

Wrap THIS up...



for future reference....

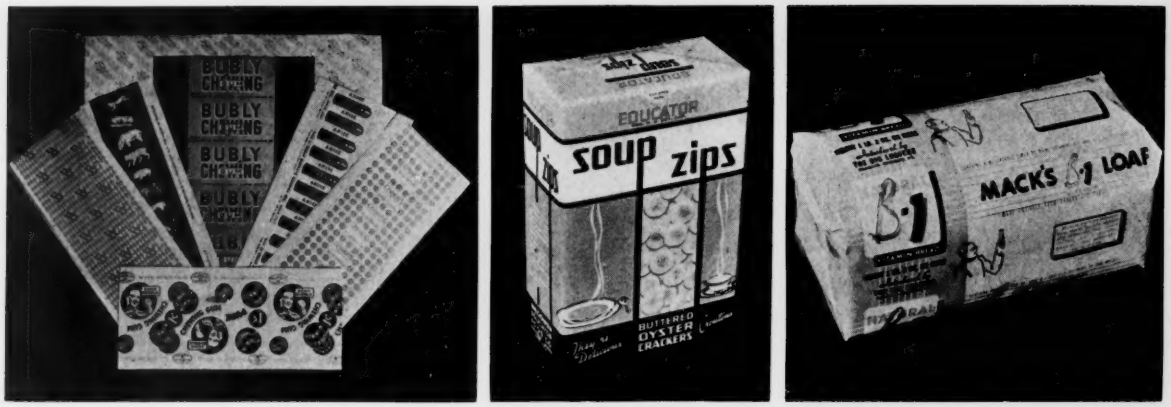
NEXT time you work on a transparent package, keep in mind the transparent packages you *now* have in the field. How do they look to the consumer? Sparkling, factory-fresh? Or frayed, broken, ripped, torn—down at the heel?

It's the factory-fresh transparent packages that do the business. Keep yours that way with Lumarith Protectoid—the transparent packaging material that *does not shrink or wrinkle.* It does not discolor or dry out with age. It is not affected by extremes of temperature or humidity. It is odorless, tasteless and non-inflammable. It cements easily and permanently. It has a perfect printing surface.

No matter what kind of a transparent package you're interested in, we have the material you want and the experience to help you use it. *Packaging Division,* Celluloid Corporation, 10 E. 40th Street, New York City. Established 1872. Sole Producer of Celluloid and Lumarith. (Trademarks Reg. U.S. Pat. Off.)

When you think of Plastics, think of headquarters
—"the Grand-daddy of them all" . . . and . . .





1. Printed waxed paper wraps as used in the confectionery trade. **2.** Blank cracker carton with waxed printed overwrap. **3.** Decorative printed waxed bread wrapper. Photos courtesy Nashua Gummed & Coated Paper Co.

Waxed Papers: Types and Uses

In the early stages of the manufacture of waxed paper a quantity of unsized or slightly sized paper was placed in a pile and a little wax shavings laid on the topmost sheet. With a hot iron the wax was melted, which penetrated the top and second sheets. Then again wax was liquefied in a pan and sheets of paper drawn through it. When larger quantities were in demand, paper in roll form was run through an iron trough containing melted wax, kept in liquid form by gas or oil burners. Mounted in the tank was a glass roll, under which the paper ran; as the paper emerged from the tank it was run over a steel scraper, then through two squeeze rolls to remove all surplus wax. Then the paper was allowed to loosely fold on itself a short distance away and after several hours was ready to cut into sheets or wind into a roll.

From the very simple beginning described, waxed paper has developed into a complicated product so that the character of the base papers and the kind of wax used are selected very carefully and scientifically to meet the exact requirements of the product to be packaged. When automatic machines for wrapping were first introduced, papers had to be made to meet the machine requirement; for instance, the first kiss wrapping machine found no paper with sufficient twisting strength in a reasonable weight that wrapped without a very big waste through torn wrappers. As other machines for wrapping various products were invented, intensive laboratory work developed papers to fully meet the requirements demanded.

In addition to paper requirements there was the proper wax content to consider and the best method of application to meet the many different needs. The reasons for the extraordinary growth of waxed paper are its attractive appearance, excellent color, high gloss, waterproofness and resistance to water vapor.

Types of Waxed Paper

In common use we speak of waxed paper in three classes, although there are many sub-divisions of the three classes. For practical consideration these may be classified as follows:

Dry Waxed Sulphite: Impregnated with paraffine of a relatively low melting point. Carries little or no surface wax and is dry to the touch. Not entirely proof against water, vapor, and air. Such a wrapper is a protection against contamination by handling or contact and, to a moderate degree, against changes in moisture content. Is not self-sealing on application of heat. Its use is indicated in many special instances.

Semi-Dry Waxed: Here the wax is driven into the fibres of the sheet and there is also a slight surface coating. Often used in delicatessen, meat, and grocery shops and in industries not related to foods.

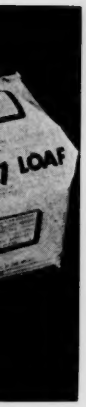
Wet Waxed Sulphate or Self-Sealing: A heavier coating of paraffine with correspondingly greater resistance to the passage of air and of water vapor. It is self-sealing on application of heat. Used as a wrapper for many products, but especially useful as a liner or divider.

Waxed Glassine: Is lightly and also heavily coated with paraffine, usually of high melting point and like waxed sulphite is odor-proof, insect-proof, etc. Waxed glassine is also made in an endless variety of grades and weights and serves various purposes.

Bread Wrappers

Waxed paper completely changed the bread industry, because it was found bread sealed in waxed paper could

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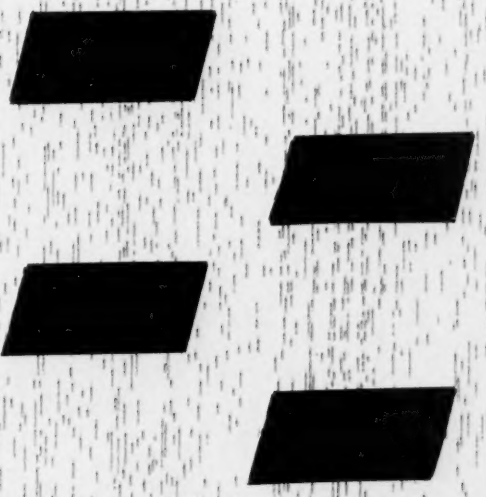
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DISTINCTIVE PACKAGING PAPERS



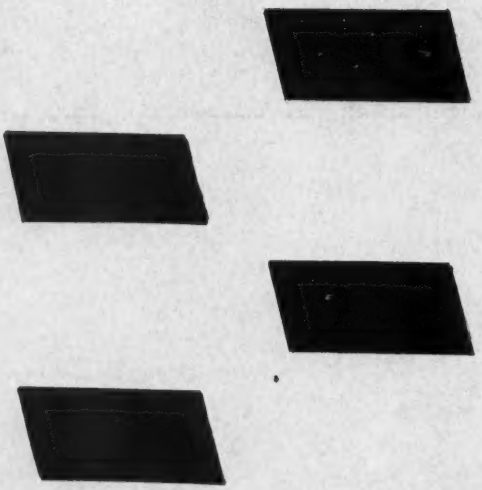
MARVELLUM

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MARVELLUM PAPERS

can help you achieve outstanding merit in the 1940 Packaging Parade. Marvellum Papers always give you NEW

COLORS
DESIGNS
EMBOSSINGS



The cover used on this insert was made by combining the Wood Veneer (Blonde Maple) and Rayon (Champagne) embossed veneer.

Write for sample sheets.

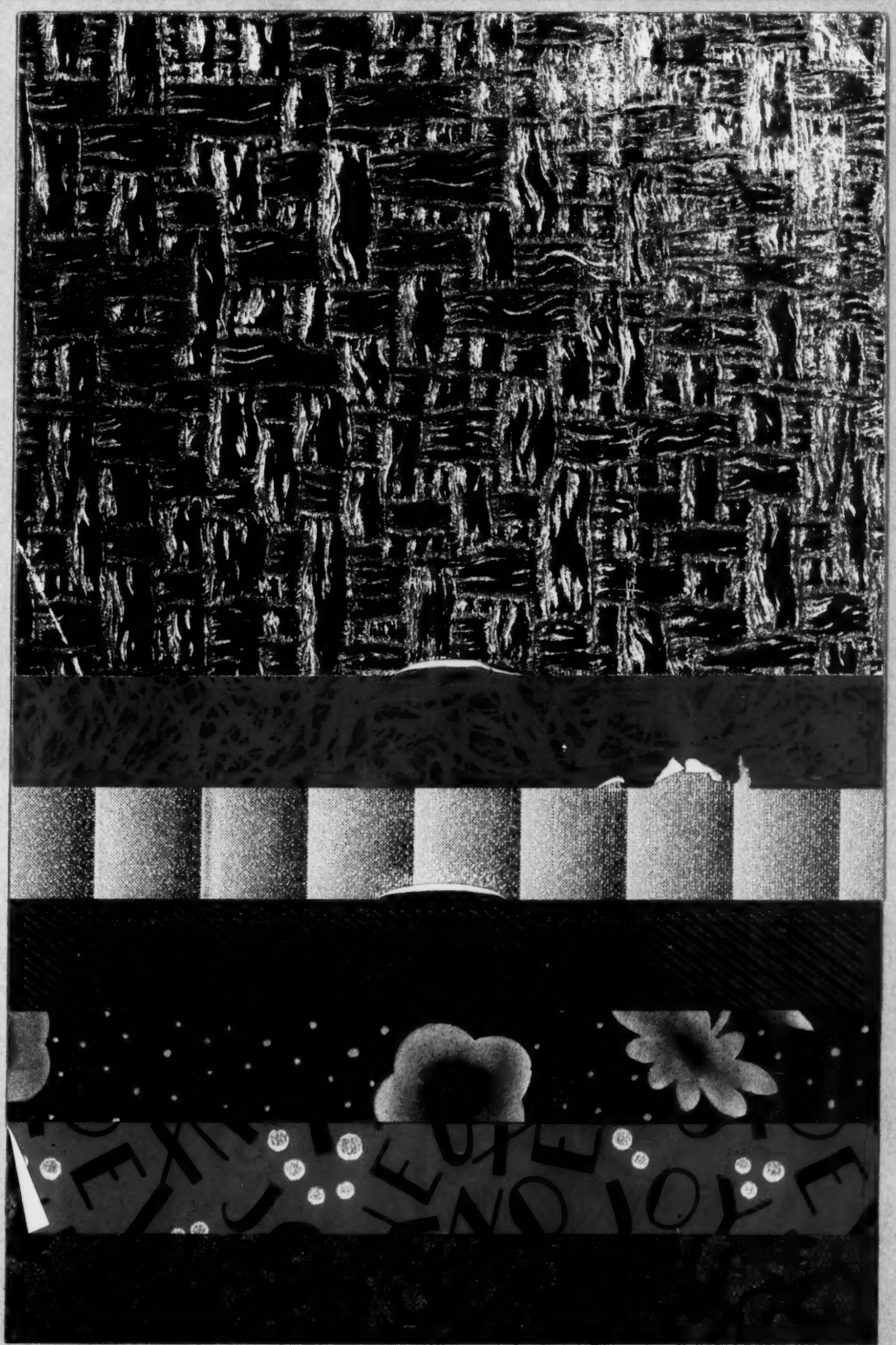
The MARVELLUM CO.

Papers Distinctive

HOLYOKE, MASSACHUSETTS

XUM

FOLD THIS CORNER UP



Decorated Foil
Bastex Pattern

Flax Embrite
92521 Bluebonnet

Shadow Silvergloss

Pyralon-Scarlet

Floral Stripe
Royal Blue

Joyeux Noel
Green

Pointlace Impression
Brown

MADRELLAN PAPERS

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DISTRIBUTED BY . . . HENRY L. GOODMAN, Boston, Mass.; CHARLES F. HEAPHY COMPANY, New York, N. Y.; HOLYOKE COATED & PRINTED PAPER CO., New York, N. Y.; HUGHES & HOFFMAN, New York, N. Y.; BRADNER SMITH & CO., Chicago, Ill., and Milwaukee, Wis.; A. HARTUNG & CO., Philadelphia, Pa.; MATTHIAS PAPER CORP., Philadelphia, Pa.; CHOPE-STEVENS PAPER CO., Detroit, Mich.; BLAKE, MOFFITT & TOWNE, Pacific Coast; SIERRA PAPER CO., Pacific Coast; ZELLERBACH PAPER CO., Pacific Coast; JOHN LESLIE PAPER CO., Minneapolis, Minn.; NASSAU PAPER CO., St. Paul, Minn.; THE QUEEN CITY PAPER CO., Cincinnati, Ohio; PAPER SERVICE, INC., Rochester, Buffalo, Syracuse; ROACH PAPER CO., Little Rock, Ark.; E. H. WILKINSON & CO., LTD., Toronto, Canada; AMERICAN PAPER EXPORTS, INC., Export Agents, New York, N. Y.; B. J. BALL, LTD., Australia and New Zealand.

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be baked in central bakeries and distributed *oven fresh* throughout large areas. Not that any waxed paper would allow this, but the proper weight base stock and the correct amount of wax coating allowed the bread to breathe—for yeast in bread does not entirely stop acting after the bread is baked. In good bread there is a secondary yeast action which results in giving off certain gases and moisture content which, if confined, hastens the formation of mold and chemical reactions.

Waxed paper that allows bread to breathe is of great value; it duplicates nature, in that it has the properties of the natural outer coverings of some fruits. While it is possible to make a waxed paper resistant to moisture, the fact that paper can be waxed to allow moisture to pass through is a highly valuable property.

Waxed paper has been exceptionally valuable in the baking industry; it is also equally valuable in the confectionery, soap, florist, tobacco, medical, and many other lines of manufactured products.

With the introduction of electric refrigeration, which is a dry cold, waxed paper is more and more used to prevent loss of moisture due to the cold dry temperature of electric refrigeration. Electric refrigeration, in conjunction with waxed paper, gives nearly perfect preservation; also preventing flavor contamination from foods in the ice chest and excluding all injurious atmospheric and other influences.

Frozen Food Wrappings

Waxed papers have come into extensive use in the rapidly growing frozen food industry where special types of waxed paper particularly suited to sub-zero sealing have been developed. The qualities desired under these circumstances include maximum moisture vapor transmission resistance, flexibility at low temperatures and maximum heat seal strength. Many coatings are compounds of waxes with either synthetic resins or rubbers.

Opaque Waxed Papers

The development of opaque waxed paper is the most important progression that has occurred in recent years and it deserves attention from all who package. Opaqueness has enhanced the advertising value of waxed paper and especially is this true when the paper has been coated with colored pigments and then waxed. Such papers have a definite purity of hue and brightness, and offer a brilliant contrast to printed matter on the wrap.

Research has shown that opaque waxed papers, which immediately became popular through their superior appearance, are effective in retarding harmful changes in many products accruing from light rays. In other words, opaque waxed paper is penetrated less by light rays than ordinary waxed paper or a white transparent paper. Colored opaque waxed papers are considerably superior to white opaque waxed papers.

Just as colored glass bottles are a protection from light rays, opaque waxed papers, especially if colored, advantageously replace ordinary waxed papers or transparent materials in packaging products that may turn rancid, lose flavor or color, or otherwise be affected by exposure to light. Waxed paper is also made transparent, when it is desirable that the printed matter on the container be clearly visible.



4. Four typical printed waxed wraps used over blank cartons. Photo courtesy Kalamazoo Vegetable Parchment Co.



5. Specially prepared wax coated paper used on frosted food packs. Courtesy The Menasha Products Co.

A development that reduces cost in carton packaging and at the same time retaining or excluding moisture to suit the product is becoming extensively used. Formerly cartons were purchased printed, then product filled, and the carton wrapped in waxed paper and hot sealed—fusing the waxed surfaces together. Today a plain unprinted carton is used: the waxed paper is printed in a continuous roll, then a hard, glossy coat of wax is applied on the printed side. When the waxed paper is used for wrapping the filled carton, each wrapper is automatically cut off from roll and accurately registered by an electric eye device. As the wrapper is cut, it is fed over a glue roll that applies a thin even coat of the adhesive to the unwaxed surface. This method gives the finished package a smooth, glossy appearance, sift-proof and insect-proof, and at lower cost per carton.

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Vegetable Parchments: Types and Uses

by GLENN STEWART*

One of the most important of all food protection papers is genuine vegetable parchment. It is also one of the most interesting, for it is the only paper that will not go to pieces when wet. Since it is equally insoluble in grease, fat, oil, brine and even weak acids, it is obviously indispensable to industries with moisture and grease protection problems.

The first question a stranger to the paper business asks of a vegetable parchment manufacturer is apt to be, "What kind of vegetables do you use to make it?" This requires information on the origin of its name. Like so many other new things, when first discovered, it was found to look like something else—in this case, the specially tanned skins of sheep and goats, known for centuries as "parchment." Obviously, this belonged to the "animal kingdom." The new product was made from paper, itself made from flax or cotton or wood, all from the "vegetable kingdom." So it became "vegetable parchment" and the word "genuine" was later prefixed.

The quickest and best test of vegetable parchment is to soak it in water. It immediately becomes so soft and pliant as to appear even stronger wet than dry. The water may be cold or boiling. It will not destroy the sheet or cause it to go to pieces.

Among the many uses of vegetable parchment, both printed and plain, are:

Meat-packers: Fresh meats, such as pork loins, beef tenderloins, pork sausage, etc., need protective wrappings that will not disintegrate in contact with the meat juices. Genuine vegetable parchment is "stronger wet than dry," is not completely air-proof, and is the ideal wrapper for these products. Smoked meats and cooked hams are wrapped in genuine vegetable parchment, not only because it is snowy white in color, but because it is grease-resistant. Being soft, pliable, and strong, parchment does a "better job of wrapping." Lard and shortenings in cartons or boxes are protected in genuine vegetable parchment to avoid grease leaking through the container. It folds without breaking at the corners and is highly satisfactory as a wrapping material, as evidenced by the fact of its having been used for years for these products.

Crinkled genuine vegetable parchment is a sheet of parchment which has been creped or crinkled to increase its strength. Among its uses in the packing-house is that of liners for boiled-ham retainers, the users claiming that a better yield is obtained, there is less labor in cleaning the molds and the molds do not have to be re-tinned as frequently for they do not pit quite so badly as unlined molds.

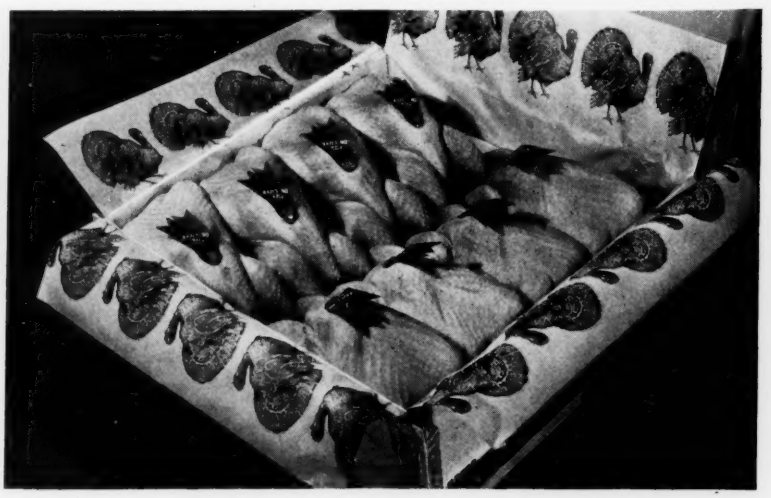
Poultry-packers: Genuine vegetable parchment, being both insoluble and grease-proof, is used by poultry-packers to provide extra protection for the contents. Since parchment is not weakened by moisture, it can be depended upon to keep food in good condition. The parchment being snowy-white, and not absorbing fat or blood or becoming soggy, makes for a sales-compelling and attractive appearance.

Dairy industry: One of the best illustrations of the unique protective qualities of vegetable parchment is afforded by the almost universal use of this sheet in the wrapping of butter. Here the packer demands (1) absolute purity and freedom from all tastes and odors, (2) wet strength and (3) grease-proofness even while wet.

Vegetable parchment meets these requirements and

* Kalamazoo Vegetable Parchment Co.





1. Genuine vegetable parchment wrappers for cheese. Photo courtesy of Kalamazoo Vegetable Parchment Co. **2.** Box liners of printed parchment are not only attractive but protective—insoluble and grease-proof. Photo courtesy of Paterson Parchment Paper Co.

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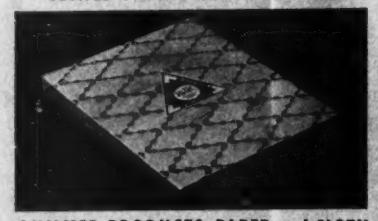
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consequently has been accepted as the standard wrapping for good butter for many years. It offers protection from without as well as from within, for parchment will help to keep foreign odors away from butter.

Parchment is used as a wrapper for prints or rolls of butter, also as a lining for butter boxes or butter tubs. Many types of cheese are wrapped in parchment.

Vegetable parchment can be boiled in water or brine to completely sterilize the sheet before it comes in contact with the butter.

Milk or cream can gaskets of vegetable parchment are also generally used to prevent leakage, to keep out dust and dirt and to protect the milk or cream from worn or rusty can covers and cans.

Ice cream should also be protected by vegetable parchment in the form of a wrapper for bricks or a protective covering for the tops of cans of bulk ice cream. Vegetable parchment strips clean from the ice cream and leaves no shreds of wet paper in case the ice cream becomes soft.

Small squares or circles of vegetable parchment are often used over the tops of milk bottles to provide complete protection to the pouring lip of the bottle until it reaches the housewife's kitchen.

Fish-packers: The fishing industry is a large user of vegetable parchment in the form of wrappers for fresh, frozen or smoked fish. The reason is obvious, for a wrapper is required that will have plenty of wet strength and that will stand moisture, brine and salt. In addition the parchment sheet is fat and oil resistant.

For frozen fillets of fish it is customary to use parchment waxed on one or both sides because of the greater insulating value and because the waxed surface prevents the paper from sticking to the frozen fish.

Vegetable industry: Many vegetables shipped with or packed with cracked ice are protected with parchment. The moisture from the vegetables or the water from the melting ice does not harm the parchment, so that the protection is maintained all the way through to destination. This parchment may be used in the form of a printed band, a printed wrapper or box or crate liner.

Many vegetable packers are finding it to their advantage to use a printed wrapper or band of vegetable parchment to identify their products.

Lard and shortening manufacturers: Vegetable parchment is used extensively in the lining of tubs and tierces and also in the lining for 1-, 2-, 4- and 8-lb. cartons in which lard and shortening is packed. The unusual fat and oil resistant qualities of parchment are necessary to prevent grease penetration and staining.

Frosted Foods: Vegetable parchment paper, both plain and coated with paraffin on both sides, has long been used for wrapping fish fillets. Some packers have used parchment papers for fruits and vegetables, particularly for liquid or semi-liquid packs. For liquid and semi-liquid packs, the paper is first made into a bag. The bag is opened out in the carton, filled, the top folded over and the seam or fold is heat-sealed.

Miscellanous uses: Many other types of products require the unusual protective qualities of vegetable parchment. For instance, manufacturers of steel ball bearings have found it advisable to use parchment as a wrapper to prevent the oils in which these bearings have been dipped from penetrating the wrapper and staining the carton in which they are packed.



3. Printed parchment wraps for fish fillets. Photo courtesy of Paterson Parchment Paper Co.



4. Parchment butter wrappers. Photo courtesy of Kalamazoo Vegetable Parchment Co.

The manufacturers of rubber specialties use parchment as a covering for sticky surfaces, for the interleaving of rubber and as a transfer label for branding inner tubes.

Printing: Special inks are used in the printing of genuine vegetable parchment, since the printing must not offset when used on greasy, wet or briny foods. The inks must stand the boiling test, for if you will refer back to the dairy industry, you will find that most of the dairies boil their butter wrappers and liners before they use them. The majority of the wrappers are printed. Printed wrappers are probably one of the best mediums of advertising, for the carton of butter, with its printed wrapper enclosing the print, goes right to the home and is looked at many times daily by the one who does most of the buying.

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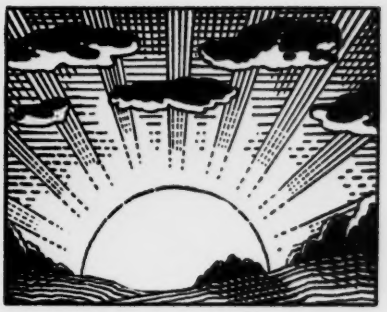
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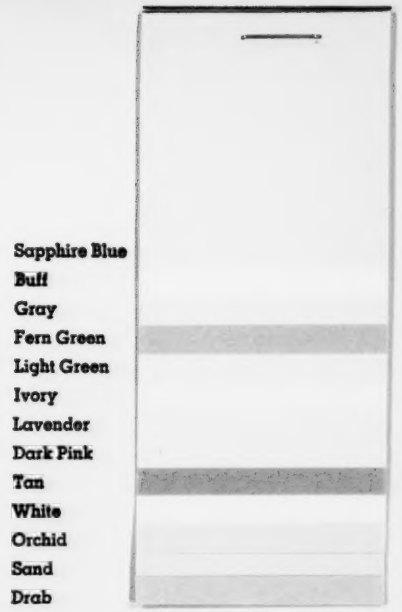
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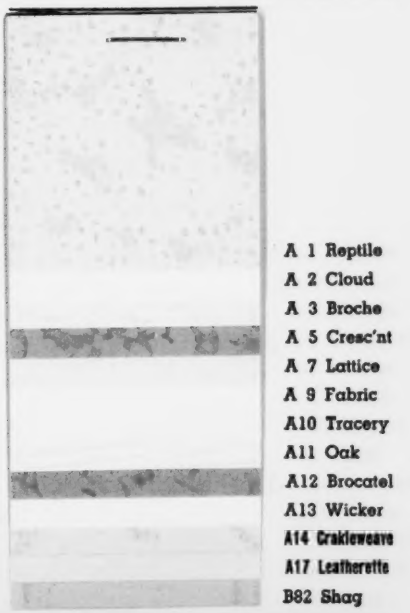
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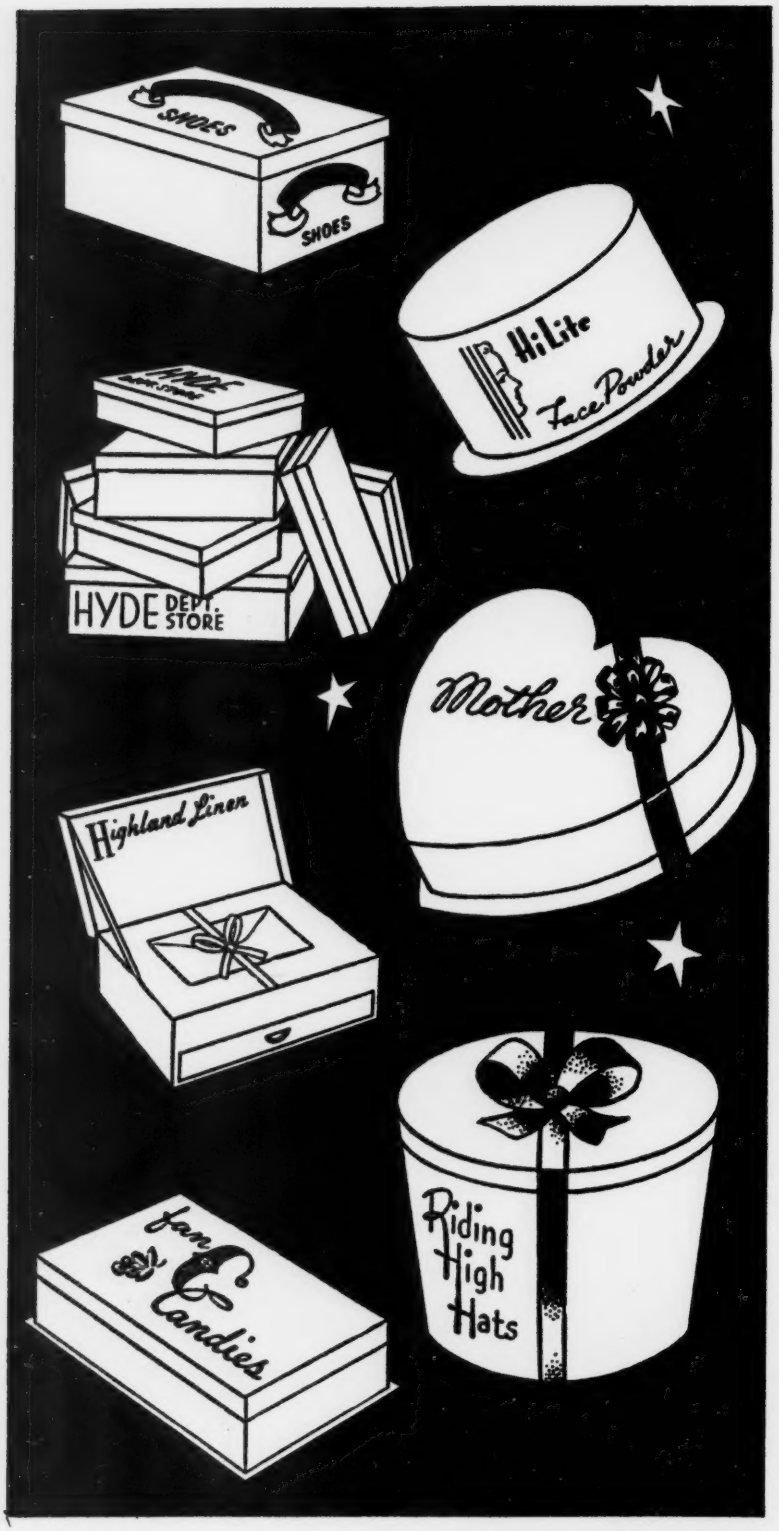
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Transparent Wrapping Sheeting

by HAROLD A. LEVEY*

While all of us can recall seeing thin gelatin sheeting on packages as far back as we can remember, it was only until a year or so before the first World War that we saw a completely transparent form of cellulose sheeting. The nature of the demand for the transparent wrapping fairly parallels that of the glass container in accordance with such phrases as "See what you are buying." However, it offers decorative possibilities not within the scope of the glass container. Its adaptability, due to its extremely flexible nature, makes this possible. Further, it may be colored, embossed, printed upon, and satisfactorily bonded together.

Cellulose and Cellulose Derivatives

The first type of transparent cellulose sheeting which met with ready acceptance as a general wrapping was composed of viscose or regenerated cellulose. This material is completely transparent and colorless, is slightly hygroscopic, non-inflammable (but burns), and is the lowest-priced completely transparent sheeting obtainable on today's market. It is affected to a degree by differences in atmospheric conditions, more particularly humidity changes. It can be obtained in colors and embossed designs. This non-moisture-proof form is not used as a food wrapping in direct contact with food products possessing a high moisture content. Its most extensive application is that of an outer wrapping for nearly every type of commodity of such size as can be readily enclosed within its standard size of sheet dimensions, and the price and profit margin of the article permitting its use. Its relatively low price, together with its ease of sealing and workability on automatic equipment, has extended its use to almost limitless fields.

A relatively new type of sheeting which has recently found its place on the American market as a general wrapping is that which is composed of cellulose acetate. It possesses an unusually high degree of clarity, brilliancy, and surface sheen. It is practically unaffected by atmospheric conditions and humidity changes. It can be obtained in colors, is readily printed upon and embossed, as well as quickly cemented. Its properties can be so varied that the same material can be made into sheeting which has striking rigidity, or can be prepared so that it possesses the flexibility of rubber sheeting. In addition, these conditions can be closely maintained through wide humidity and temperature changes. Its moisture transmission values can be controlled within definite limits, so that it may be readily applied to almost any type of wrapping, including direct contact with food products which it encloses. As it is not affected by humidity changes, it is effectively used as a covering for the windows of envelopes, window cartons, and display containers.

A new form of sheeting which has recently become available is made of ethyl cellulose, an ether of cellulose and ethyl alcohol. It is stable to alkalies, heat and light. Its high flexibility is inherent in the material and is not obtained through the use of any added substance. It is a tough, clear, glossy sheet which transmits up to 95 per cent of visible as well as ultra violet light. It remains strong and flexible and does not shrink or curl on aging, or on exposure to light and over wide variations in temperature and humidity. It is readily printed upon or embossed and easily cemented. Some types are moisture-proof and heat-sealing. The standard material has good resistance to attack by greases and vegetable oils and special types are available which are entirely unaffected by naphthas and mineral oils. Ethyl cellulose sheeting is an excellent material for window packages and display containers and can be used in direct contact with foodstuffs. Although it will undoubtedly find its place as a general purpose wrapping material, its combination of properties indicate its more immediate application to uses at present not satisfactorily filled by other sheetings.

In order to overcome some of the shortcomings of the viscose or regenerated cellulose sheeting, more particularly to render it moisture-proof, this type of cellulose sheeting is coated with a thin film formed from a nitrocellulose lacquer containing resins, plasticizers, and waxes. The resulting sheet is essentially moisture-, oil-, and grease-proof, of greater strength and increased inflammability. While it is not completely water-proof, it is highly resistant to the transmission or penetration of moisture which should be the interpretation of the term "moisture-proof" as used in this article. This treatment reduces its sensitiveness to humidity changes and increases its resistance to the attack of insects and the growth of mold.

Because of the moisture penetration resistance offered by this coating, this type of sheeting is invariably used where the wrapping must come into direct contact with the food products, and especially when it is desired that the original moisture content in that food or similar commodity be retained for a fairly long time. This applies particularly to such materials as confections, baked foods, and tobacco products, whose moisture content must not be lost; while crackers, candies, and related materials must not take up moisture. Even though this type of sheeting costs nearly one-third more than the uncoated sheet, the volume used of this coated sheeting is about three times that of the uncoated sheet.

* Consulting Chemist and Industrial Engineer.

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Obviously, its resistance to moisture, as well as its ability to maintain the moisture content of wrapped materials in almost the same state as when they left the manufacturer, appears to more than offset any increased cost that may be incurred.

All of the above types of sheeting are practically odorless and tasteless, and can be formed into an almost gastight enclosure. Certain of these types possess sufficient thermoplastic properties to make a satisfactory "heat seal" to bond sheet to sheet by the application of a moderate amount of heat and pressure. These composite forms of sheeting make a wrapping which will retain nearly all of the original odor and flavor of the materials contained therein.

A new development in transparent sheeting has recently appeared on this market which possesses the property of filtering out the ultra violet rays or active elements of daylight. These rays are largely responsible for the spoilage of many forms of food products and cosmetics, which prematurely become rancid or lose their odor, flavor, or color when exposed to natural light. This form of sheeting is clear and transparent and is obtainable in the standard form of viscose sheeting, as well as the coated or moisture-proof product. Where a greater degree of opacity to these detrimental light rays is desired, this type of sheeting is available in an amber shade, and will preserve such wrapped products for a longer period than the above described colorless sheeting.

Resin-treated Papers

Papers have not yet been prepared in modified or treated form which have resulted in a sheet that could be considered completely transparent; that is, a transparency comparable with that of water or glass, or which when held up to the light would not diffuse the light source. As a result, these types of papers appear in varying degrees of translucency. Properties and uses of the various types of wet and dry waxed paper, glassines, waxed glassines, vegetable parchments and the like are, of course, already well known to the packaging industry. There are, however, types of resin-treated papers which have an unusually high degree of translucency approaching transparency. They have good moisture transmission resistance, and are practically oil- and grease-proof for the limited period of time for which they are used as a food wrapping. Like all treated papers, as well as all the other sheeting mentioned in this article, these last-named products are air-tight and dust-tight. They are immune to insects and mold growths. Their inflammability is slightly greater than that of the untreated paper.

Resin Sheeting

There is now available sheeting made wholly from resins. While there are many varieties from which sheeting can be made, the vinyl and styrene types pioneer in this field. These products possess the same physical appearance as the cellulosic types; however, they are of a different texture. Forms can be produced which are rigid, hard and brittle; other varieties are soft and flexible, while certain forms of the vinyl acetals possess rubber-like elasticity. As a wrapping sheeting this rubber-like characteristic will find acceptable applications in the packaging of all types of objects of very irregular contour. This property enables the sheeting to closely follow the varying surface outlines and remain taut. The classes of resins usable for sheeting include the vinyl esters, vinyl acetals, styrene and acrylic esters. While there are variations in their properties, they all possess desirable heat sealing characteristics, brilliant surface sheen, high transparency and water resistance. The sheeting composition can be formulated to be highly impervious to the transmission of moisture. Because of their excellent adhesive characteristics at moderately elevated temperatures, many of the resin types of sheeting find application as a laminating sheet over paper, fibreboard and fabric. Polystyrene thin sheeting, because of its unusual electrical values, is finding growing uses as insulating films for condensers and coils. Development is in active progress in the direction of overcoming certain physical and chemical problems as well as engineering difficulties involved in their fabrication into thin sheeting. Their use is now limited by the relatively high cost of the sheeting as well as the basic cost of the resins themselves. However, each year sees substantial price reductions, and in due course these types may approach competition with the other forms.

Rubber Derivative Sheeting

An innovation in transparent sheeting has recently made its appearance. It is not composed of a cellulosic material, but is made from a rubber derivative known as rubber hydrochloride. These new forms of completely transparent sheeting are highly moisture transmission resistant. They are slightly plastic, but not elastic. Their characteristic difference from the cellulosic type of transparent sheeting is that while their initial resistance to tear is less than the cellulosic type, they offer substantially greater resistance to a tear once started.

Another variety of sheeting is an exceedingly plastic film composed of rubber and wax which can be permanently stretched to several times its original dimensions. While this film is translucent, it has several properties in common with the above types.

Modern trends have been decidedly in the direction of the completely transparent wrapping, and of these there is a preponderance of favor toward the moisture-proofed types, notwithstanding their substantial increase in cost. These situations indicate clearly that the desideratum is to make the wrapped object completely visible as well as to reach the consumer in practically the same condition as when it left the manufacturer. Such conditions demand a form of sheeting which shall itself be invisible and at the same time possess a high order of protective value. It must include such properties as water-, oil- and grease-proofness, and dust- and air-proofness, a high resistance to moisture transmission, good

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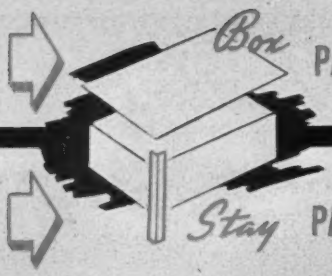
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McLaurin-Jones Box Paper line includes such varied items as Crystal Box and Lightning Flash Enamel. Super Colors and Warelac . . . all in a rainbow group of colors, plain or embossed. Of course McLaurin-Jones Plated, Pyroxylin and Casein Metallic Coated Papers also are available in a wide range of designs, colors and embossings.

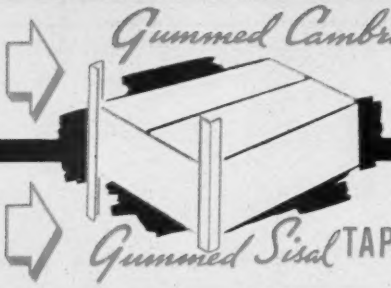
Setup box makers prefer McLaurin-Jones "Ideal" Stay because it gives maximum results with minimum waste. Its ability to grip edges firmly is well known and its possibilities for faster production save time and money for its users.



McLaurin-Jones Guaranteed Flat Gummed Label and Seal papers include white and colored papers in a variety of weights and gummings suited for sticking to any type of surface. It includes a complete line of gummed metallic coated papers, gummed foil and gummed glassine . . . in fact any gummed paper that can be used for labels and seals.



McLaurin-Jones' Ware Foils are made particularly to serve for printed and embossed labels and seals, announcements, window display trims, box wraps, box tops, French fold programs and presentations, announcements, menus, wine lists, etc. Gold, copper, silver and colored foils are all available for packaging purposes.



McLaurin-Jones Cambrics give box corners the strength of reinforced concrete. By constant working with box makers and shippers, and keeping in close touch with their problems, we have succeeded in providing thoroughly practical types for every purpose.

McLaurin-Jones creped Sisaltape grips the manufacturers' joint of corrugated cartons with a permanent bulldog grip that only McLaurin-Jones gumming gives. You can rely on your cartons when the manufacturer's joint is sealed with McLaurin-Jones Creped Sisaltape.



McLaurin-Jones Brush Enamel fills every need of lithographers, label producers, box manufacturers and printers who seek outstanding results.



McLaurin-Jones casein metallic coated papers are made in weights suitable for box and package maker, label and seal manufacturer, and the printer of direct mail and specialty advertising. Their excellent printing surface, even coating and lustre, are widely acclaimed. They are available gummed or ungummed in several weights.



Eleven soft colors plus pure black and white make up a range suited to every taste. Excellent for box covering and label usage, either gummed or ungummed.



McLaurin-Jones Pyroxylin Coated Papers in gold and platinum are recognized by multitudes of printers, label and tag manufacturers, and box manufacturers, for their rub and tarnish resistant surfaces . . . for their ability to take the most intricate printing . . . for their waterproof surface.



McLaurin-Jones "Planet", "Comet" and "Sunrise" Blue Star Sealing Tapes are well known and widely used by shippers the country over. All are known for their strength, outstanding adhesive qualities and their ability to stand the hardest abuse in transit. They can also be had printed.

A McLaurin-Jones Product

McLAURIN - JONES COMPANY

MILLS: BROOKFIELD AND WARE, MASS. — OFFICES IN NEW YORK, CHICAGO, LOS ANGELES

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BETTER PROTECTION

PAPERGLAS*—can bring your product new important advantages.

EXTRA HIGH MOISTURE RESISTANCE

A vast number of packaged foods need highest moisture protection. Many packaging materials offer relative moisture protection; laboratory tests prove Paperglas has relatively higher moisture protection.

NO LOSSES AT FOLDS

Paperglas is soft and flexible. It can be folded or crumpled without loss of moisture protection. The stresses of conversion do not mar it. Tests prove Paperglas best.

FLAVOR STAYS FRESH LONGER

Longer shelf-life means lower costs. That good, delicious, long-remembered flavor you strive to give your product wins repeat sales—the lowest cost sale. Paperglas preserves that flavor longer.

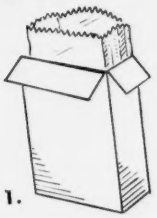
MAY BE USED ON MOST PACKAGE MACHINES

Paperglas is adaptable to most carton lining machinery. Can be used as a prefabricated bag—or fed by the sheet—or from the roll.

PAPERGLAS IS BETTER PROTECTION FOR

Pudding Desserts
Gelatin Desserts
Peanuts, Nuts
Pop-Corn
Hard Candy
Cough Drops
Spices
Tea
Coffee
Potato Chips
Crackers
Chocolate, Cocoa
Ready Mixed Flours
Cereals
Frozen Foods

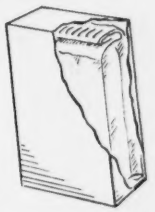
How SOME CUSTOMERS use the ADVANTAGES of PAPERGLAS



1. Liner placed in carton



2. Accordion folded closure



3. Carton flaps glued tightly

Paperglas

WESTFIELD RIVER PAPER COMPANY, INC.
Russell **Mass.**

* PLAIN . . LAMINATED . . AND LACQUER COATED

TRIAL OFFER

Send us your package. Our laboratory will conduct initial tests to determine adaptability of Paperglas* to your package. Our conclusions will be forwarded to you for checking.

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tensile strength and flexure value, together with a retention of these properties over a substantial period of time. It must be available in colors, capable of being readily printed upon and embossed, easily and quickly cemented, as well as being readily adapted for packaging machine (automatic or semi-automatic) operation.

While the moisture-proof viscose sheetings have, in general, most of these desirable properties, they have, however, many shortcomings. They are a laminated composite sheet, the surface coating which renders them moisture-proof having a thickness of only one ten thousandth inch. While moisture transmission resistant, these sheetings are not water-proof. On immersion, or sufficiently long contact with water, the thin protective coating will become detached, thus becoming ineffective for the purpose desired.

Relief effects are now obtained by embossing and printing which in many cases have eliminated at least one wrapping and resulted in a package of more attractive design and greater utility. Owing to the complete transparency of this sheeting, only the printing is visible and appears to be a part of the object wrapped.

Gummed transparent sheeting is now available, both clear and in colors. It can also be supplied printed upon and embossed. Printed and cut-to-shape seals and closures are now fabricated which effectively serve the purpose of sealing and labeling or marking such packages. It also designates the strategic point at which the wrapping might be most readily opened. The clear and colored transparent gummed tape is used in many manually wrapped packages as a time-saver and results in a more striking wrapping. The clear, colorless, transparent gummed tape is by far the best product for making an invisible repair on torn paper, fabric, or other materials.

As transparent sheeting possesses unusual strength for its thickness, the sealing of packages so wrapped and sealed can be opened only with difficulty. To overcome this situation some manufacturers leave a part of one flap turned up at the closure. Others enclose a small strip or narrow ribbon of a thicker variety of the sheeting, in another color, which projects out at the joint in the wrapping.

As binding tape, transparent cellulose sheeting finds use when folded into a tube with lapped joint and then pressed flat. It may be obtained clear or in colors, as well as with an inserted core of other materials such as metallic foils and paper or fabric that may contain printed matter which shows through the transparency.

SOURCES AND TRADE NAMES

Types	Trade Names
1. Regenerated Cellulose	
E. I. du Pont de Nemours & Co., Wilmington, Del.	*DuPont Cellophane*
Sylvania Industrial Corp., New York, N. Y.	*Sylvania Cellophane*
2. Coated Regenerated Cellulose	
E. I. du Pont de Nemours & Co., Wilmington, Del.	*Moisture-proof Cellophane*
Sylvania Industrial Corp., New York, N. Y.	*Moisture-proof Cellophane*
3. Cellulose Acetate	
American Products Mfg. Co., New Orleans, La.	*Inceloid A.* *Inceloid M. T. R.*
Celluloid Corp., Newark, N. J.	*Lumarith Protectoid*
Eastman Kodak Co., Rochester, N. Y.	*Kodapak*
Transolene Corp., Barrington, Ill.	*Transowrap*
4. Ethyl Cellulose	
American Products Mfg. Co., New Orleans, La.	*Inceloid E*
Dow Chemical Co., Midland, Mich.	*Ethofoil*
5. Rubber Derivatives	
Goodyear Tire & Rubber Co., Akron, Ohio	*Pliofilm*
Marathon Paper Mills, Rothschild, Wis.	*Parafilm*
Marbon Corp., Chicago, Ill.	*Marbofilm*

Types	Trade Names
6. Casein	
American Foundry & Machine Corp., Brooklyn, N. Y.	*Inda*
Kraft-Phenix Cheese Corp., Chicago, Ill.	
7. Coated Casein	
Kraft-Phenix Cheese Corp., Chicago, Ill.	
8. Gelatin	
Central Import Corp., Chicago, Ill.	*Transpara*
9. Resin Treated Papers	
Riegel Paper Corp., New York, N. Y.	*Diafane*
Transpara, Inc., Rhinelander, Wis.	*Maralux*
10. Resins	
Bakelite Corp., Bloomfield, N. J.	*Polystyrene*
Carbide & Carbon Chemicals Corp., New York, N. Y.	*Vinylite*
Gordon-Lacy Chemical Products Co., New York, N. Y.	*Vinyl sheeting*
11. Coated Starch	
American Products Mfg. Co., New Orleans, La.	*Amyloid*
12. Coated Carbohydrate Gums	
American Products Mfg. Co., New Orleans, La.	*Carbofilm*


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WHETHER you require labels, seals, cartons, tight wraps, bags or displays your product will always smile radiantly when dressed in Reynolds Metal. Not only does Reynolds Metal possess the smile that pleases but the facts show that:
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2. Reynolds Metal excludes light completely.
3. Reynolds Metal prevents moisture absorption.
4. Reynolds Metal prevents moisture loss.
5. Reynolds Metal repels insects.
Have you a packaging problem? If you have, Reynolds Metal can help you solve it. Write for information to our Packaging Division.
REYNOLDS METALS COMPANY, INC. — GENERAL OFFICES — FEDERAL RESERVE BANK BUILDING, RICHMOND, VIRGINIA
NEW YORK — SAN FRANCISCO — CHICAGO

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PROPERTIES OF TRANSPARENT WRAPPING MATERIALS

Types	Grease- and Oil-proof	Moisture-proof	Water-proof	Air- and Dust-proof	Mold- and Vermin-proof	Rancidity Inhibitive	Heat- and Pressure-sealing	Dimensional Changes with Humidity Differences
1. Regenerated Cellulose	Yes	No	No	Yes	No	No (Some types are)	No (Some types are)	Yes
2. Coated Regenerated Cellulose	Yes	Yes	No	Yes	No	No (Some types are)	No (Some types are)	Yes
3. Cellulose Acetate	Yes	No (Some types are)	Yes	Yes	Yes	No (Some types are)	No (Some types are)	No
4. Ethyl Cellulose	No	Yes	Yes	Yes	Yes	No (Some types are)	Yes	No
5. Rubber Derivatives	Yes (Some types are not)	Yes	Yes	Yes	Yes	No	Yes	No
6. Casein	Yes	No	No	Yes	No	No	No	Yes
7. Coated Casein	Yes	No	No	Yes	No	No	No	Yes
8. Gelatin	Yes	No	No	Yes	No	No	No	Yes
9. Resin Coated Papers	Yes	No (Partially)	Yes	Yes	Yes	No	Yes	No
10. Resins	Yes	No	Yes	Yes	Yes	No	Yes	No
11. Coated Starch	Yes	No	No	Yes	No	No	No	Yes
12. Coated Carbohydrate	Yes	No	No	Yes	No	No	No	Yes

Printed Transparent Cellulose

by T. W. KOCH*

As recently as fifteen years ago, the prediction was freely made that a successful process of printing upon transparent cellulose film would never be developed. Among others who ventured such prophecies were commercial printers who had made unsuccessful efforts to print upon cellulose film with existing inks and presses.

That the use of printed cellulose has, in the short intervening time, reached the status of a commonplace practice in packaging, is a tribute of high order to the ingenuity and perseverance of those who had the courage to defy precedent and make the necessary outlays of capital to develop inks, engravings and presses which have made possible the remarkable effects now available in a variety of forms.

The processes of printing employed, the equipment used and the results attained in the production of printed transparent cellulose have been widely publicized; it is



1. A wrap printed in two colors as used to protect and display dressed poultry. Photo courtesy Shellmar Products Co.

* Director of Sales, Shellmar Products Co.



2



3

2. Chewing gum, once wrapped with plain transparent sheeting over a printed label, is now produced with printed transparent wraps. Photo courtesy Shellmar Products Co. **3.** Gold and bright colors find an attractive background in the product itself in this bread wrap. Photo courtesy The Forbes Lithograph Mfg. Co.

assumed that for the purpose of this description only a brief reference to processes and available material forms is required. Detailed information, as well as expert counsel on packaging methods and design is available to present and prospective users, not only from the manufacturers of the various types of film, but also from the numerous concerns who devote their attention to the conversion of the film into its final forms.

In the order of their development, there are three major processes of printing on transparent cellulose presently in use. These are:

1. Letterpress, which employs relief engravings and oil inks.
2. Gravure, in which impressions are made from etched cylinders with lacquer inks.
3. Aniline, using spirit inks and, usually, rubber printing plates.

Each method possesses certain advantages, as well as certain limitations, which will be briefly considered.

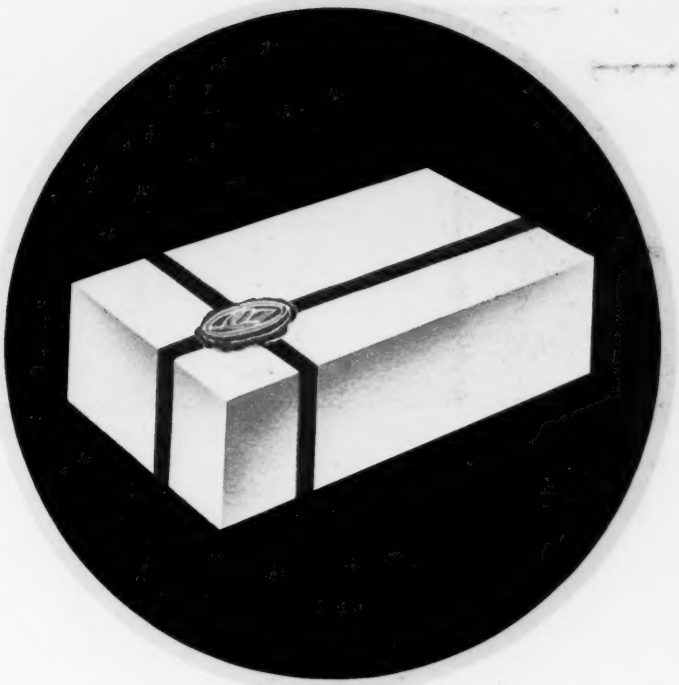
Letterpress printing: This is the best known of all printing methods and is the one by which the first successful printing on transparent cellulose was accomplished. However, due to the temperamental nature of the film, really successful commercial production was not attained until roll-fed presses were employed. These required the addition of many devices, such as means of continuous control of the web, or sheet, during the printing operation, to insure registered printing of successive colors. Several types of roll-fed presses are presently in use. In some types, a number of printing or plate cylinders are arranged around a central platen cylinder and the printing is done on a continuous web, which is then delivered in the form of either sheets or rolls. Other types of presses cut the sheet to a predetermined size before the printing impression is made.

In either case, because oil inks permeate the film only to a negligible degree, it is essential to use slip-sheets to prevent offsetting. Where presses are of the sheet delivery type, the sheets of printed cellulose are interleaved with paper of an appropriate character which is allowed to remain in place during the drying process. Where delivery from the press is in roll form, a special type of slip-sheet paper is introduced before the web of printed cellulose reaches the winding mechanism and, in this case, the combined roll of cellulose and slip-sheet goes to a drying rack for the necessary interval. In practically all cases, the slip-sheets are removed before the cellulose is trimmed to size, or rewound and slit to required widths, in the case of rolls.

Letterpress printing may be done on either surface of the cellulose film and, where it is not objectionable for the printed side to come in contact with the product to be packaged, the use of reverse or underside printing permits the retention of the full gloss, or sheen, of the cellulose, thus enhancing and vivifying the colors of the inks. Letterpress printing is also employed almost exclusively where the printed cellulose is to be used on moist or greasy objects, notably on meats and fish. It can be done successfully on all types of cellulose film now available and, since it is of the "wet" type of printing, a fairly comprehensive range of effects employing halftones and bendays is possible.

Gravure printing: This process came into use only after letterpress printing on transparent cellulose had become fairly well standardized and its limitations

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KROMEKOTE is the result of eight years of careful research and experiment by Champion, the world's largest manufacturer of coated papers. During this time, the best technicians in the paper business have sought to perfect a revolutionary and practical method of putting a higher gloss on coated paper. For several years Champion has had machines in production, striving for an efficiency that would make Kromekote a commercial product.

The enthusiasm with which Kromekote has been received by package manufacturers is sufficient proof of the success of this Champion process. For the first time a manufacturer can secure a coated sheet which combines extremely high finish and remarkably fine printing qualities. Kromekote is made in attractive shades which are clean, solid, and mirror-like in their depth of surface, and remarkably free from mottle.

Kromekote is unusually free from cracking or chipping, and the body stock is properly sized for pasting on setup boxes. In actual box manufacture, Kromekote wraps well on all types of automatic wrapping machines and stripping boxes. It prints beautifully, and colors are commercially fast to light and free from run or bleed.

Kromekote is a fine printing paper, yet it is more than that. Here is a covering worthy of the most beautiful boxes for gifts, candy, stationery, perfume, cosmetics, and all other products which require the setting that only an attractive package can give.

Kromekote is an exclusive, patented product of Champion. It has a real affinity for ink and prints like Champion's other fine papers. The economy of printing is another advantage of Kromekote.

This paper now is made in white, ivory, primrose, canary, light pink, orange, light red, light blue, turquoise blue, deep blue and pale green. Additional colors are being developed as rapidly as possible.

Kromekote is finding an additional market in the printing of high finish labels.

Kromekote has many possibilities in the printing, packaging and labelling industries.

We shall be glad to send samples if you will address your request to The Champion Paper and Fibre Company, Hamilton, O.



Four color illustration courtesy of House & Garden, copyright The Condé Nast Publications, Inc. Bruehl-Bourjes Photo, Condé Nast Engraving

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CINCINNATI, OHIO	Queen City Paper Co.
NEW YORK, N. Y.	Holyoke Coated & Printed Paper Co. Royal Paper Corp. Chas. W. Williams & Co., Inc.
PHILADELPHIA, PA.	Garrett-Buchanan Co. Matthias Paper Corp. Whiting-Patterson Co., Inc.
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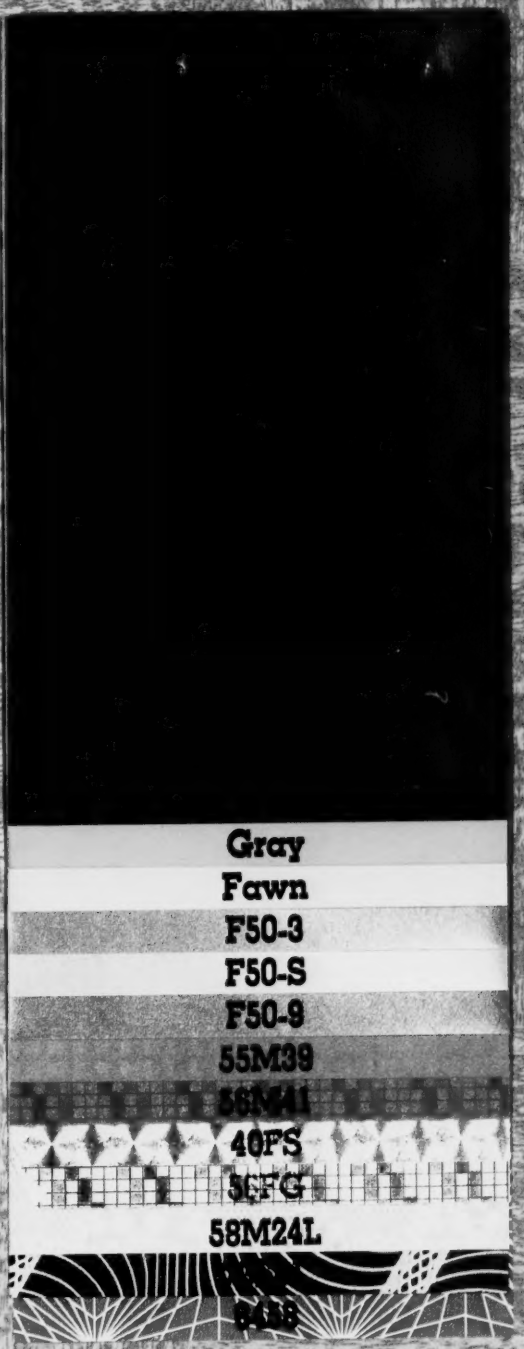
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  Fast-to-light and waterproof colors with a distinctive dull, smooth finish.
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- **METALLACS**
  Pyroxylin Gold—Silver—Copper—Bronze. A full pyroxylin coating—waterproof. Also Congo (casein) Metallics.
- **SHEEN PAPERS**
  24 colors from stock, specials to order. Your choice of 31 patterns.
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  Gold—Silver—Colors.
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  Unusual lace pattern available in a variety of colors and finishes.
- **PRINTED** (Spiralon and Weblite shown) Fancy — Trade Marks — Labels — Wraps. From stock and to order.



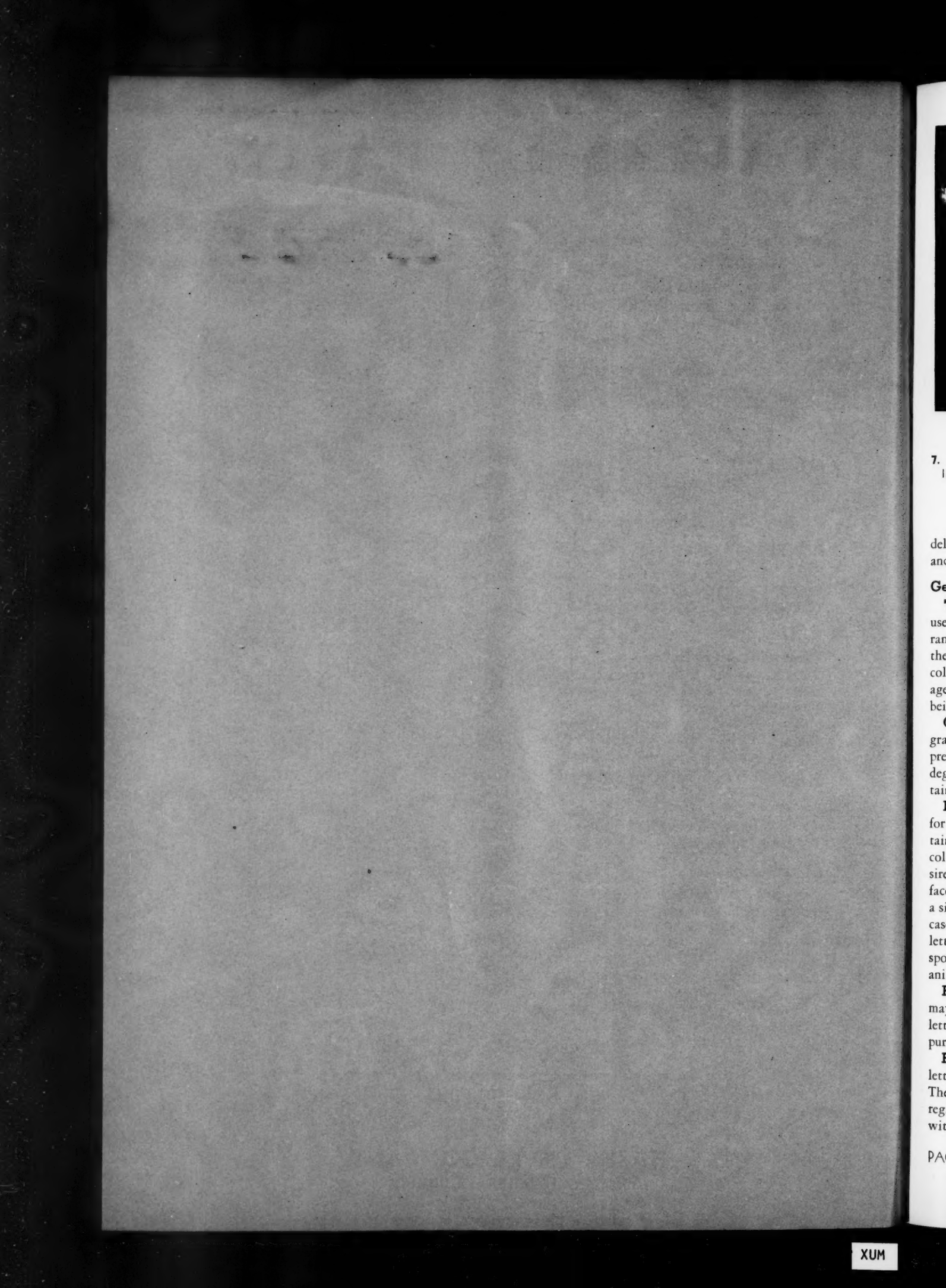
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This is PARKAY—WOODGRAIN—No. [illegible]





6. Left: Transparent wraps are finding increasing usage in the textile industry. Note how fabric shows through outline illustration to complete the picture. Photo courtesy Milprint, Inc.



7. Right: Unusual application is this florists' flower pot wrap lithographed on Pliofilm by The Forbes Lithograph Mfg. Co.

deliver individual completed packages, crimp-sealed top and bottom.

General Information

Tints: Both gravure and aniline inks may be used in producing tints on transparent cellulose. A wide range of colors is available and the tints do not impair the gloss of the film, and alter its transparency only as the color of the tint reacts on the color of the product packaged. Letterpress tints are generally unsatisfactory, being inclined to muddiness.

Opacity: As mentioned in preceding paragraphs, gravure and pigmented aniline inks produce impressions of greater opacity than letterpress, although a degree of opacity suitable for many purposes can be obtained by the latter process.

Metallics: The gravure process is pre-eminent for printing metallics. Brilliance or opacity can be obtained with a single impression, although two layers of color may be employed where extreme opacity is desired. Letterpress metallics are very satisfactory in surface printing, where the metallic may be underlaid with a sizing, as of yellow in the case of gold, or white in the case of silver. Where reverse printing is employed, letterpress metallics cannot be underlaid, and are correspondingly lacking in opacity. Satisfactory metallics for aniline production have not as yet been developed.

Reverse printing: All three printing processes may be employed to produce reverse printing, although letterpress is inferior to either gravure or aniline for this purpose, except where solid lays of full color are used.

Register: Where fine register is required, the letterpress process is superior to either of the others. The use of metallic plates, giving sharp, controllable register, permits the production of effects not possible with either gravure or aniline. Where the design is such that color may be superimposed on color, register often is of negligible account in gravure or aniline work.

Tone or screen work: Bendays and half-tones are well within the range of most good producers of letterpress printing on transparent cellulose. Half-tone work is possible to a considerable degree in gravure, with a limited range of benday screens or stipple effects also available. The employment of such effects in the aniline process is definitely limited to date.

With the amount and character of the research work now going forward in the field of cellulose printing, it is not too much to expect that four-color process work will eventually be done on this material.

Package Forms

Printed transparent cellulose is available in a variety of forms, the better-known of which are listed below:

Sheets: These are available in any type of film, printed in from one to six colors, in practically any size.

Rolls: Continuous printed rolls of any type film are obtainable in widths ranging from one-quarter inch to 36 inches, printed in from one to six colors. Printed designs may be continuous, or may be spot-registered for use on automatic packaging machines, where the printed design is accurately located on the package by means of a photo-electric cell device or an "electric eye."

Bags: Single or double wall bags of transparent cellulose, printed in from one to six colors are available in flat, square and satchel bottom styles. Nearly all types of film may be employed in their construction. Sizes range from very small bags, in the flat type, up to 10 by 18 inches in the satchel bottom style.

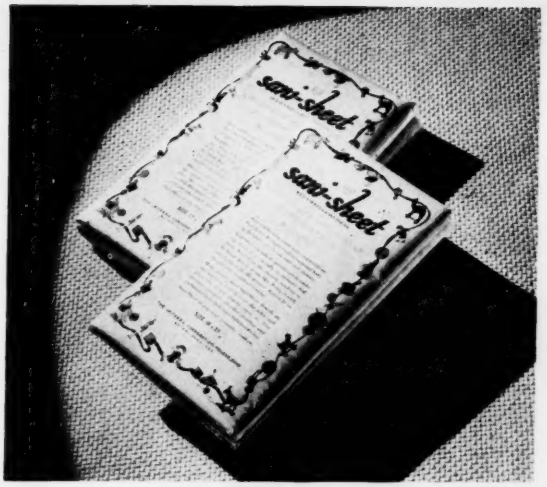
Envelopes: Both die-cut and roll-cut styles are available in wide range of sizes with either side or end

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openings and with printing in any number of colors up to six. Most types of transparent cellulose can now be successfully fabricated into envelopes.

Specialty packages: Tubes for cigars and other slender objects, such as tooth brushes, are available, printed in as many as six colors, and in most types of film. Other packages combining printed cellulose faces with backs or affixed pieces of board or other material may also be had. Sheets or rolls of printed cellulose, affixed at one or both sides to corresponding sheets or rolls of foil, glassine and other materials, are available. Other types of packages employ sheets or rolls of printed cellulose in combination with folding cartons, or with fibre plates or trays; in some instances, such combination packages are supplied with retaining rings or other essential parts to make a complete package.

Laminated printed cellulose: This comparatively new development is treated at greater length elsewhere in this book. For the purpose of this article, it may be said that printed cellulose, laminated to a variety of base materials, is available in sheets, rolls, specific types of bags, and folding cartons.



8. Gaily printed transparent wraps carry informative labeling data on these textile items, while providing necessary sanitation. Photo courtesy Celluloid Corp.

Window-Faced Wraps

Window-face wraps have been developed essentially as a means of combining the advantages available through the use of opaque and of transparent materials for application to wrapped products. They may be applied on standard wrapping machines and produce a package which affords the colorful printing or lithography possible through the use of paper plus the full transparency of cellulose sheeting.

They are most widely used in the baking industry but have also been applied for wrapping candies, meat products, fish, fruits, vegetables, textiles, hosiery, macaroni and even cotton batting. Bakers' wraps must necessarily be moisture-proof and heat sealing moisture-proof transparent cellulose is therefore utilized in conjunction with heavily waxed heat sealing papers. Bakers' wraps are supplied in continuous rolls for use on all standard bread wrapping machines. When used for candy bars and small units of confection, the wrappers are again supplied in continuous rolls for machine wrapping. In such instances, moisture-proof cellulose and grease-proof glassine papers are utilized. In other instances, colored bond papers, colored glassines, parchment, aluminum foil, kraft and fancy box papers have been used.

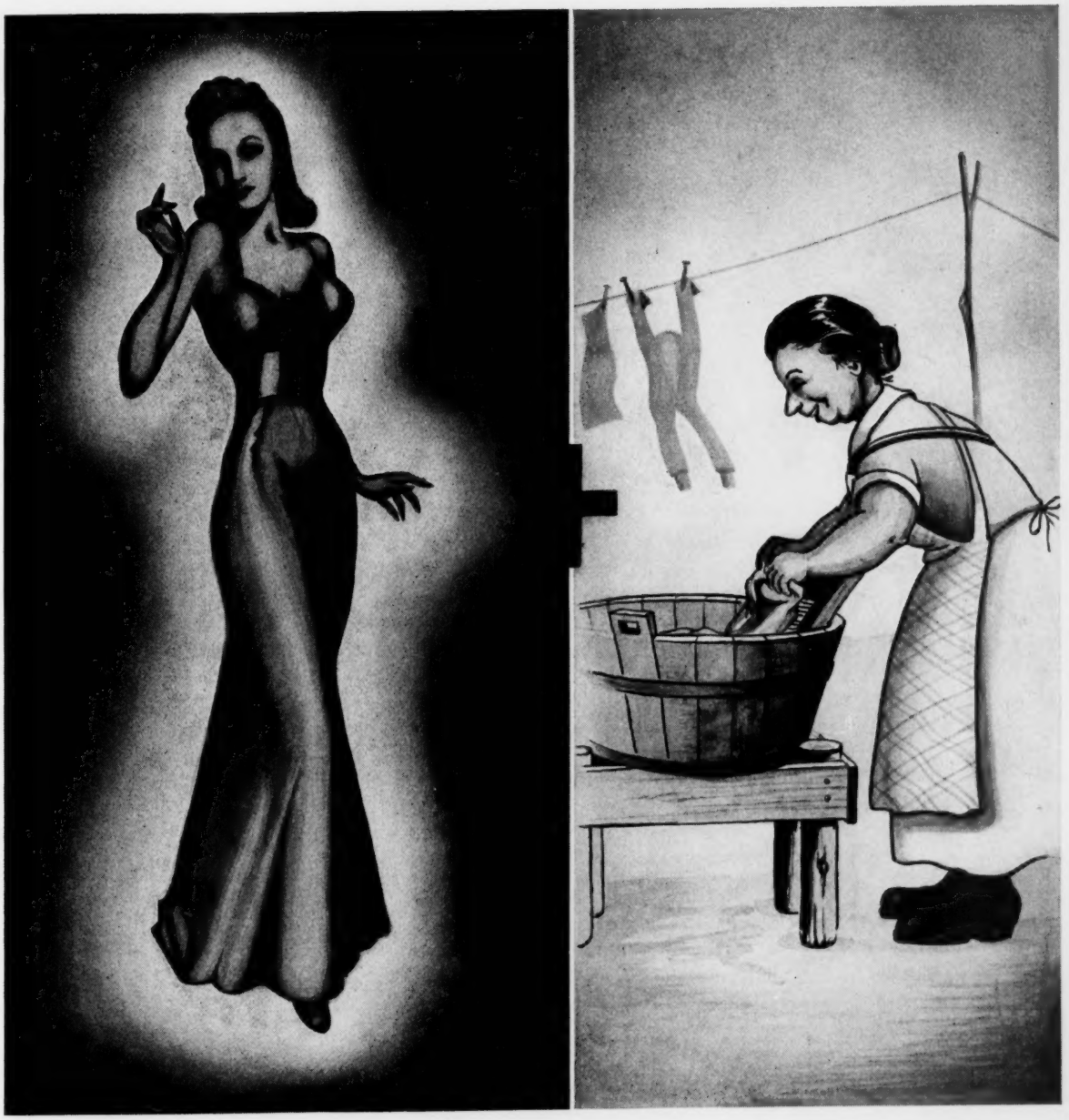
Not all window wraps are made with a continuous strip of window. Some are known as die-cut wraps and consist of printed paper wraps with a cellulose window



1. Two variations of the window-face wrap as used in bread wrapping. Photo courtesy Thomas M. Royal & Co.

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covering the die-cut opening. In other cases, the same effect is secured through the lamination of a continuous film of cellulose to a die-cut film of paper. The effect here is to secure the advantage in finish and appearance of cellulose lamination plus the window opening.

Continuous strip window material has been used for a number of years in the fabrication of bags, the opaque strips forming the side walls and gussets of the bag, while the transparent strip forms a window on the front, back and a portion of the bottom of the container. On occasion, the bottom may be reinforced to withstand the weight of the product in shipping and handling.



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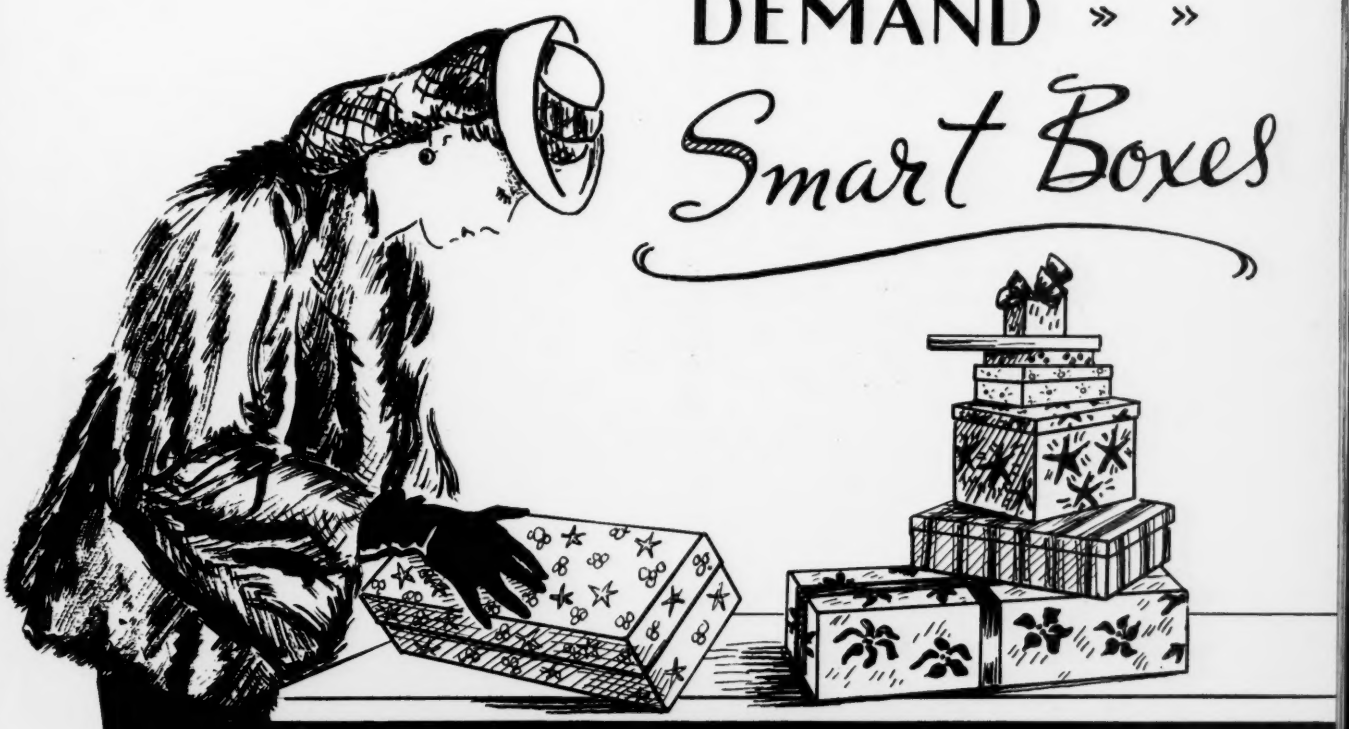
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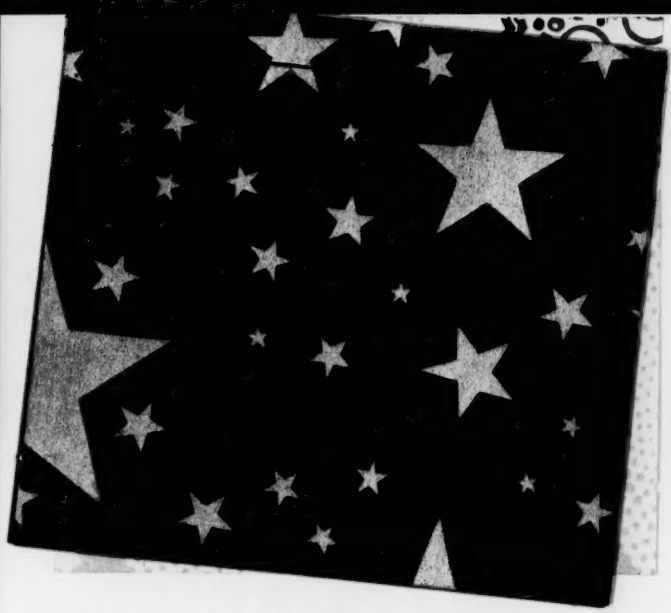
2. Bread wrap, with printing on transparent portions, utilizing the bread itself as background. **3.** Bag fabricated from window-face material. **4.** Window-face wraps as used for buns and other baked goods. **5.** An unusually large wrap for cotton batting. **6.** Window-face wraps are being used with increasing frequency for fruit and vegetable packaging. All photos courtesy of Milprint, Inc.

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These swatches represent a few of the many distinctive, colorful papers in the Royal offering for 1940 . . . See the complete selection in our Sample Books.

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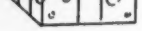
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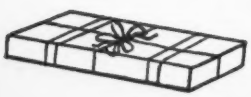
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Laminating and Combining

by ALAN S. COLE*

Lamination itself is not a new art. Different types of paper have been combined in different ways as far back as the graphic arts have been recognized as an industry. But, in packaging, we think of laminating as the combining of transparent films to any one of a variety of other materials by means of which new uses for old materials are found, and new materials are created having properties of strength, appearance and various types of protective qualities which neither of the combining agents had in themselves.

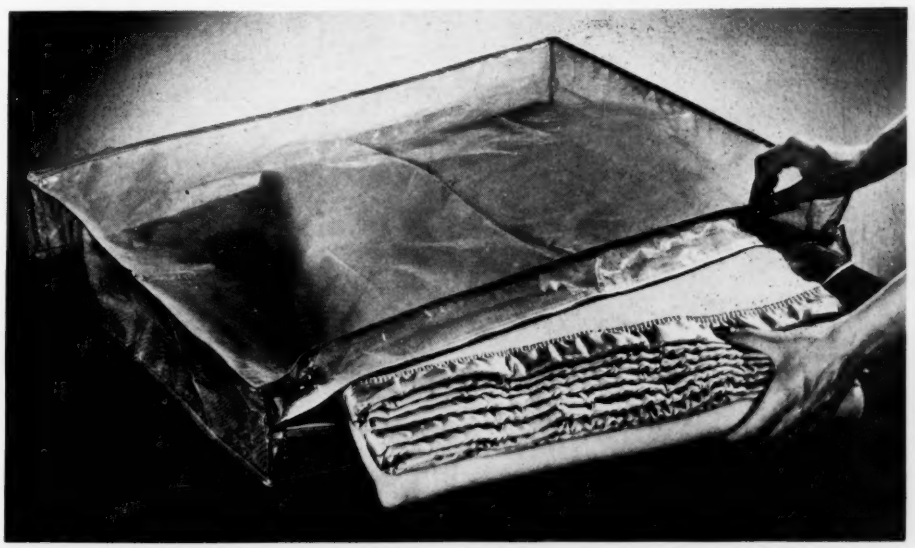
For example, metallic foil, .0003 1/2 in. thickness, can be combined with an acetate film and the resultant product is ideal for uses extending from insulation in housing construction, to sales cards, or from labels to light reflectors. An acetate film and a flimsy cotton gauze can be combined to form an entirely new product which is transparent, flexible, tough and strong. A transparent film and a kraft paper can be combined into an entirely new product having remarkable folding strength and, at the same time, one that is waterproof, oilproof and insectproof, yet will print and emboss beautifully.

Laminating in its present stage of perfection has been made possible through the development of a perfected cellulose acetate sheet or film, although, to some extent, regenerated cellulose is still used for specific purposes. And in some cases, where the protective quality of the combined sheet is of prime consideration, Pliofilm is employed. Cellulose acetate, however, has a number of qualities not held by other transparencies. For instance, it has a very high resistance toward atmospheric conditions, and the hydroscopic value of the film is such that after the initial shrink which is negligible, there is no shrinkage or stretching of the sheet due to outside conditions. This stability eliminates the danger of curling or warping. The dialectic properties run very high and tests show a resistance exceeding 3000 volts per mil of thickness. Consequently, its use as an insulator is steadily growing.

Regenerated cellulose has the advantage of being considerably cheaper than cellulose acetate. Generally speaking, it is easier to work with; it affords the laminator a much wider range of adhesives and there is also less difficulty in the printing operation. However, it reacts to a much greater extent to atmospheric conditions and, unless coated, it is not moistureproof. When an extra lacquer coating is applied, regenerated cellulose loses its primary cost advantage to a great extent. Pliofilm has a much greater tensile strength and greater pliability than other transparencies. It is a comparatively new material and doubtless much will be learned about it in the near future.

Finished laminated sheets may be divided into two types. In one the printing of the image or message is directly on the transparent material in reverse and, after this is done, the printed transparent sheet is laminated to the respective stock. Laminators employing this method believe that a better color value is obtained, inasmuch as the pure color pigments are in direct contact with the transparent material, and it is comparatively easy to obtain full and solid coverages by this method.

* General Mgr., Breskin Publishing Corp



1. Blanket container for re-use in storage in the home. Fabricated of transparent acetate laminated to mesh fabric. Photo courtesy of The Arvey Corp.



2. Cartons of board laminated to transparent cellulose. Printed on reverse side prior to lamination and hence scuff-proof. Die-cutting of board provides integral window formed by laminated sheet. Courtesy of Shellmar Products Co.

The other type combines a clear transparent sheet over the printed surface of the combining stock. Laminators using this method will tell you that it provides a greater degree of protection for the printed surface since, in addition to the protection of the film itself, there is an additional protective film of adhesive. This latter process is, naturally, the only process possible when the combining stock happens to be a fancy printed or embossed paper, a kraft or any similar type.

In the most commonly accepted technique, the transparent web is unrolled and the adhesive applied from a roller. The film then passes through a long drying oven which reduces the adhesive to a semi-soluble gummy state. It is then applied under a roller to the subject to be laminated. The combined sheets then pass through a different set of rollers under heat and pressure. This new application of heat softens the adhesive again just enough to make a perfect and permanent binding. The finished lamination then is either rewound or, depending upon the subject, it may be cut or sheeted.

Another process known as the hot-melt method is accomplished without the use of a solvent, the laminating being done immediately after the application of the adhesive to the transparency.

Still a third method sees the adhesive applied to the stock to be laminated and the transparent film brought to the sheet and pressed onto it under applied heat and pressure.

Recently, material manufacturers have produced transparent sheets already impregnated with an adhesive so that direct lamination is possible without the application of an adhesive on the machine. For some purposes, material may also be obtained which requires nothing more than the application of heat and pressure to make the sheet actually self-laminating.

It might be well to consider some of the difficulties which have been met and overcome by the laminator in the past. Only a few short years ago, there was no such thing as standard equipment; machines were rebuilt time after time and changes made in them to meet problems as they arose. Adhesives, while obtainable, were still far from their present stage of development. Usually small diameter paste rolls and small diameter combining rolls were employed. The use of paste meant that drying was necessary. The small diameter paste rolls brought about springing in the roll with the result that the adhesive was applied in a non-uniform film, and a rubber covered roll and a metal covered roll were used for the combining operation. The rubber roll showed up every imperfection in the paper. The only dryers that were known were regular paper machine dryers. When the combined sheet was run around a series of such dryers, the board flexed and lost its rigidity, the tension causing either the film or the stock to creep.

But today's machines have been developed specifically to meet the needs of the art. New units have paste rigs that have rolls of large diameter ground down to .0001 in. and fitted with micrometer adjustments which permit the even application of the thinnest imaginable film of adhesive. Only a single bond is necessary and the cutter may be positioned 50 ft. or more from the combiner so that the combined products get a little air drying on their way to the cutter. These machines have attained a speed of as high as 500 ft. of finished lamination per minute.

First of all among its outstanding qualities, is the fact that the laminated sheet is about 100 per cent moistureproof and almost completely waterproof. Secondly, it may be truly said that the sheet is 100 per cent scuffproof. It may be scratched but ordinary handling will not mar it in any way. Its wearing qualities and strength are great. Many convincing tests have been made. For example, an ordinary coated paper was laminated with an acetate sheet. Before lamination, the paper was

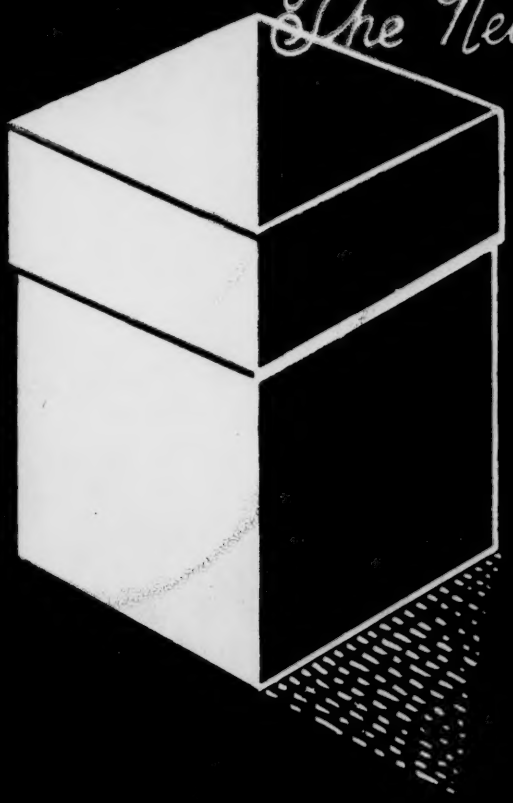
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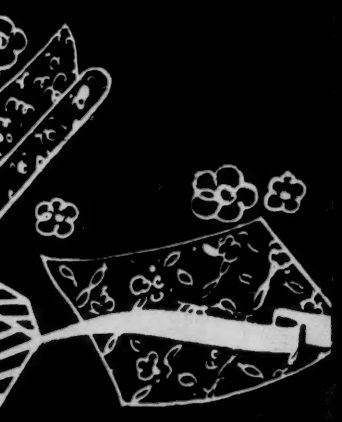
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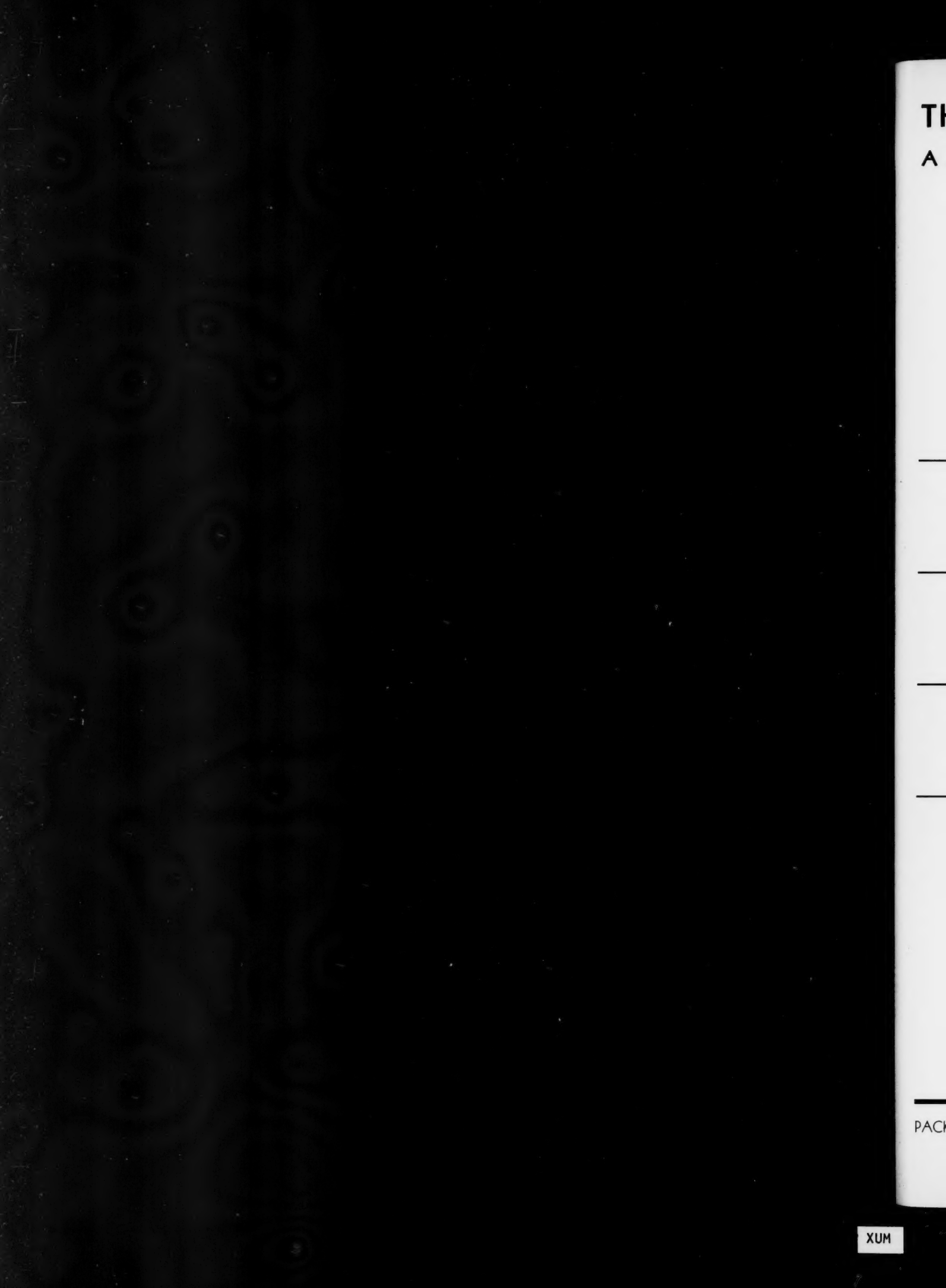
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Petticoats Papers and Packages

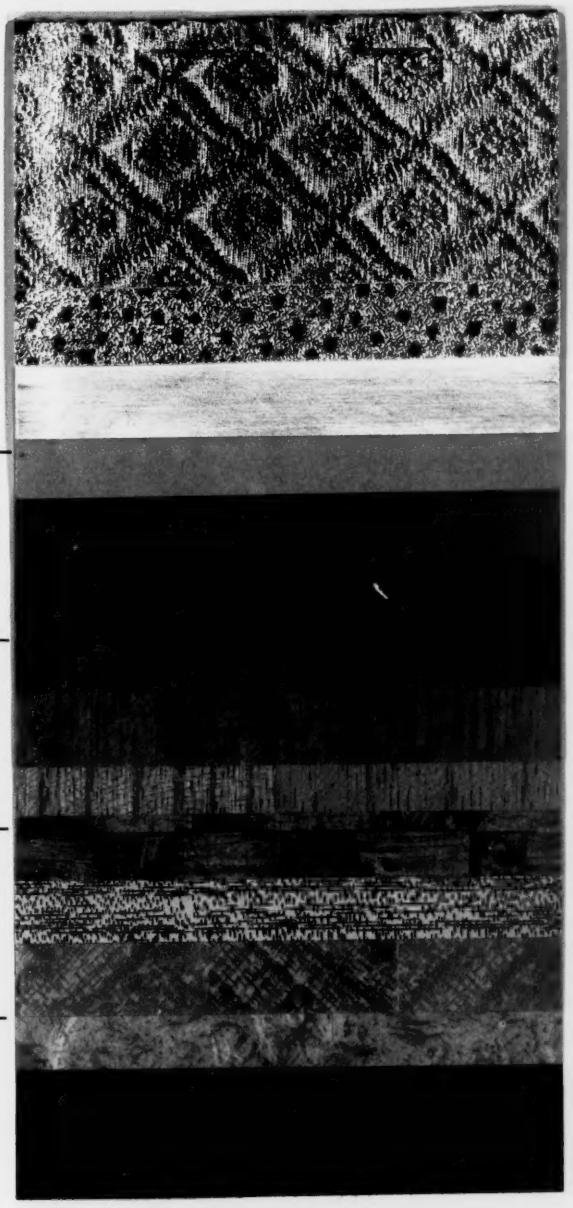


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placed in a Schopper tester which broke the sheet after sixteen double folds had been made. After lamination, the sheet stood 1116 double folds. Across the grain the same paper had an unlaminated double fold strength of 21 as compared with 805 after lamination. In another test, the flimsiest kind of stock obtainable was used which broke immediately on the first fold that the tester applied. After lamination, the sheet folded 1036 times before it broke.

The greatest quality of laminated sheeting is sparkling appearance. Basically, this is the reason for laminations popularity in the advertising, printing and graphic arts fields where its use is well established and sold. It will also be the reason in the carton and box covering fields, for it affords an eye-catching gloss.

The laminated package may be subjected to all kinds of handling and to all kinds of abuse. It may be picked up, examined and replaced, but the laminated film is virtually an armor plate and it may immediately be restored to its factory-like luster simply by the application of a damp cloth to its surface.

One very prominent lipstick manufacturer, as a test, attached his lipstick to a little display card. One lot of cards was merely printed without any coating, another lot was varnished and still another was laminated. The public reached for 80 per cent more of the laminated cards than the other two put together.

The window box or carton is an ideal form of package which has proven its selling power and its ability to display the merchandise in a package, yet keeping it safe from unwarranted handling. Lamination is the ideal answer to the window box package for, instead of an insecure spot which must be glued around the circumference of the window, the laminated window box provides an aperture covered by the film coating of the box itself, without joints or creases, smooth and free from wrinkles or dust collecting edges around the aperture.

For users of set-up boxes, lamination likewise provides the answer to a number of problems. Such boxes are frequently made of extremely fine papers which are highly susceptible to soilage. Since packages of this sort, as used on quality merchandise, frequently undergo a long period of use, it is important that such soilage be avoided and that this be accomplished by means that will not detract from the attractiveness of the container.

Here lamination provides the answer. It adds brilliance, lustre and durability to the beautiful cover papers. It reduces spoilage, both in manufacturing and in handling subsequent to manufacture. It increases the life span of the package in the hands of the consumer.

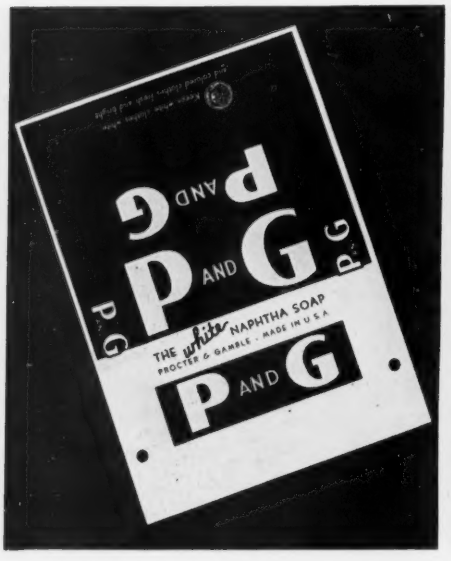
A fancy box maker has two choices. He may select the cover paper his client wishes from the world market and send it to a commercial laminator to have the high luster shell applied. Or, he may call in his paper jobber and, from a wide range of stock colors and patterns, he may select a pre-laminated cover paper which he or his printer can decorate as desired using special inks developed for this purpose.

Obviously, not every packaged product could or should be put into a laminated container. In some cases, it is impossible. A product coming in a large area package and retailing for 5 cents or 10 cents, would find the use of a laminated package out of the question, but a more expensive product, possibly coming in a small package, has everything to gain and nothing to lose.

Window boxes, as a rule, can easily stand the increased cost of lamination because the installation of a spot glued window in a box or carton will usually add some 25 per cent to 33 1/3 per cent to the price and, since the laminated material can go right over the outside of the died out window, the cost of the window material and the window applying operation is eliminated.

The science of strip lamination, which involves the procedure of running a number of rows of acetate of any width on sheet or roll in unison at one time, has also done much to reduce the cost factor for, under this process,

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3. Heat sealing laminated waxed wrapper consisting of two sheets of opaque sulphite paper with central adhesive layer of wax and rubber compound. The wrap is rotogravure printed and waxed on its outer face as well. Courtesy The Menasha Products Co. **4.** Laminated labels and box wraps. Courtesy of the Shellmar Products Co.

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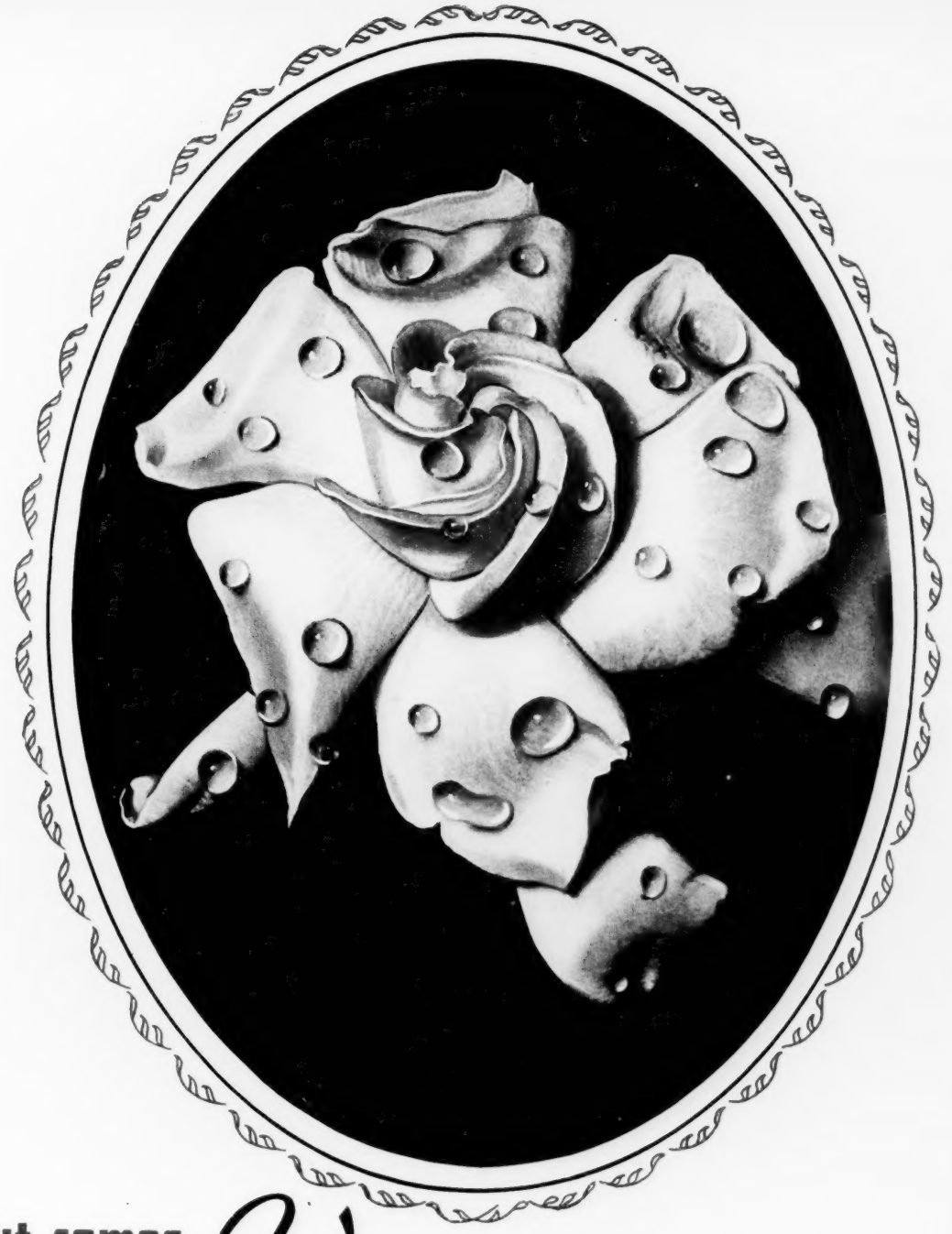
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only the front and sides of the package can be laminated without touching the back. This same idea can be utilized to great advantage on an overall laminated package so that the glue flaps can be left free of acetate, permitting a laminated package to be run through the average gluer using the regular glue that the packer or box manufacturer had been in the habit of using.

While, for the purposes of this discussion, lamination has been considered as a process of combining transparent sheeting with other materials, a number of other forms of lamination have recently begun to occupy an increasingly prominent place in packaging. Laminated bags and wraps combining treated papers of various types and using adhesives having protective as well as adhesive qualities are being increasingly used. Such adhesives, on occasion, have heat sealing qualities, moisture resistance, etc. One known as Parafilm (a patented rubber wax material used as a protective coating) is being increasingly used as the laminating agent for compound wraps and cartonboards.

Decorative and Protective Tissues

The primary function of tissue paper is adding refinement to the packaged product. Its use adds a touch of character to articles as far apart as a whiskey bottle and piece of fine lingerie. Literally, hundreds of products can gain the impression of finer quality by the simple and inexpensive process of wrapping them in a good quality sheet of tissue.

There is, however, a secondary function of tissue paper. To many articles it gives protection during shipment—a type of protection which varies with the nature of the article and the kind of tissue used.

There are, of course, different grades of tissue with different characteristics. For all-around packaging, where both appearance and protection are important, the most popular grade is No. 1 White. This is a full bleached tissue made of an all sulphite finish. Color, strength and formation, of course, vary with the manufacturer but it is not difficult to select a sheet with good white color and strength and a texture which promotes the idea of quality in the product.

Where protection is the primary object and appearance is secondary, manila or No. 2 White tissues are often used. This is especially true in packing garments which are unpacked later before being displayed to the buying public. The tissue, stuffed into sleeves and padded around the garment, prevents much of the wrinkling which otherwise would occur. Manila and No. 2 White tissue is satisfactory for this purpose even though it is not pure white in color and is not as strong or uniform as No. 1 White. It usually contains around 40 per cent groundwood pulp, a cheaper grade than sulphite, which reduces its strength and appearance but, at the same time, increases its bulking qualities.

Non-Tarnish Tissue

For wrapping such articles as silverware or metal products which tarnish easily, special non-tarnishing tissue is made. There are two kinds—white and kraft. White anti-tarnish tissue, or silver tissue as it is sometimes called, is a specially treated No. 1 grade. It contains a higher grade pulp and must be handled more carefully all through the manufacturing process than regular No. 1 White tissue. Every trace of sulphur, which promotes tarnish, must be eliminated.

Most kraft tissue will pass this test, too, for the reason that kraft pulp is made by a different process than sulphite pulp used in manufacturing white tissues. Kraft tissue, however, has the same color as ordinary kraft wrapping paper. Hence its use is generally confined to the wrapping of hardware items, machinery parts, etc., while white silver tissue is used for wrapping higher quality articles made of silver, copper and brass, etc.

Besides these grades, No. 1 tissue is made in a wide range of colors offering almost unlimited possibilities for a pleasing, harmonious effect. Manufacturers who cannot put color into their products find that wrapping in colored tissue is an inexpensive way of taking advantage of the sales appeal of color. Others use colored tissue to identify different products and still others find that certain colors serve a purpose which no other packing material can. Shoe manufacturers, for example, invariably use black or brown tissue in packing suede shoes to eliminate all possibility of white lint.

Decorated Tissues

Both white and colored tissues are also available printed with attractive designs for everyday and seasonal use, which opens up another wide field for the use of tissue in packaging. Almost any everyday item wrapped in a sheet of tissue decorated with a Christmas design, immediately makes a strong bid for sale as a Christmas gift. Carryovers by the retailer can easily be taken care of by removing the tissue and selling the item as regular everyday stock.

A new feature of the printed tissues offered for this year is water-proof paper. The inks which are used in printing the attractive designs which are available are rub-proof, spot-proof and moisture-proof, which adds

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greatly to the suitability of printed tissues for various packaging purposes.

Thus far we have dealt only with the manufacturer and producer. There is another important packaging use for tissue paper, namely, in wrapping merchandise at the point-of-sale in the retail store. Here, appearance assumes first importance. In most retail stores, especially up-to-date department stores, sales rooms are made as attractive as money can make them. Everything possible is done to provide an attractive background for the display of merchandise. Fixtures, lighting, draperies, decorations—all are used to build up an atmosphere of quality. Everything is calculated to favor the merchandise.

When any article is sold, it must be taken away from these attractive surroundings and stand on its own. The next time the customer sees it, is in her home. The only way a store can bridge the gap is by sending out merchandise in a package which carries into the home some of the atmosphere of the sales room. In creating such a package, tissue is of the highest importance not only because it adds refinement but because it is the one packaging material that comes in immediate contact with the article wrapped.

All department stores also are frequently called upon to wrap articles purchased as gifts. Here tissue is, if anything, even more important than in wrapping ordinary packages. The article is usually placed in an attractive gift box, lined with pure white or colored tissue and the box itself is then wrapped in tissue and tied with ribbon or tape. It is surprising how attractive packages can be made and how substantially gift sales can be increased with an intelligent, forward-looking gift-wrapping policy. Decorated tissues of appropriate designs and colors are used extensively for wrapping during gift-buying seasons.

It must be mentioned, too, that both plain and waxed tissue, cut into fine even shreds find an important use as a soft, clean and highly resilient packing material. Green and purple shredded waxed tissue is the standard material for packing Easter candies. Plain and waxed tissue excelsior is used for packing.

It is obvious then, that tissue paper is already an important packaging material. It is destined to become even more so. The good taste of the American people is gradually improving. Packagers are obliged to improve right along with it. The use of tissue is one effective means, and an inexpensive one, of doing so.

Tarnish Resistant Papers

An anti-tarnish paper, whether in tissue weights or heavier weights such as parchment, is one that is made wholly from materials that do not contain ingredients, chemical or otherwise, that will cause tarnish on silverware or other highly polished metal articles. From this it will be seen that an anti-tarnish paper, as a wrapper, does not offer protection from tarnish, it merely is a wrapper that itself will not cause tarnish.

One of the fallacies, long held by the public to be a truth, is that black tissue, for instance, is a suitable wrapper for silverware. As a matter of fact, the dyestuff used in making black paper has a very decided tarnishing effect on polished metals and consequently black tissue is a very unsuited material for wrapping. Practically all anti-tarnish papers are white, although in late years certain light tints have been developed from dyestuff materials that do not contain tarnish impurities.

Sulphur, by far, is the most common and the most harmful of tarnish impurities. It is present in the atmosphere in varying degrees. The atmosphere around a city such as Pittsburgh, for instance, contains much more sulphur and sulphur fumes than would be found in the atmosphere of a rural community.

The United States Bureau of Standards specifies that anti-tarnish tissues for wrapping silverware must contain no more than .0008 per cent sulphur. This has likewise been established, by one of the large silver companies, as a maximum for any paper that actually touches silver. On paper, on the outside of boxes, which does not touch the silver, the percentage is .0016.

Parchment is made from wood pulp which is manufactured by the so-called sulphite process and the paper itself is parchmentized by treating with sulphuric acid. Most parchment papers do not have satisfactory anti-tarnish qualities but some of the more expensive parchments have been washed and rewashed to remove all traces of free sulphur and can be used with more or less safety in silver wrapping. Bags made of parchment paper are usually lined with transparent cellulose to prevent a tarnishing action of the parchment itself. This transparent cellulose is practically air-tight which prevents tarnishing impurities in the parchment from reaching the silverware and is also in itself an anti-tarnish material.

A new type of cotton-lined paper, available in the form of bags or cut-to-size sheets, is also coming into use where anti-tarnish qualities are desirable. The soft cotton lining serves to absorb shipping shocks, while the paper backing makes for easy handling and permits fabrication into bags and rolls.

Flannels of anti-tarnish type are also being used as wraps and as bags of round bottom, square bottom, draw string and other types.

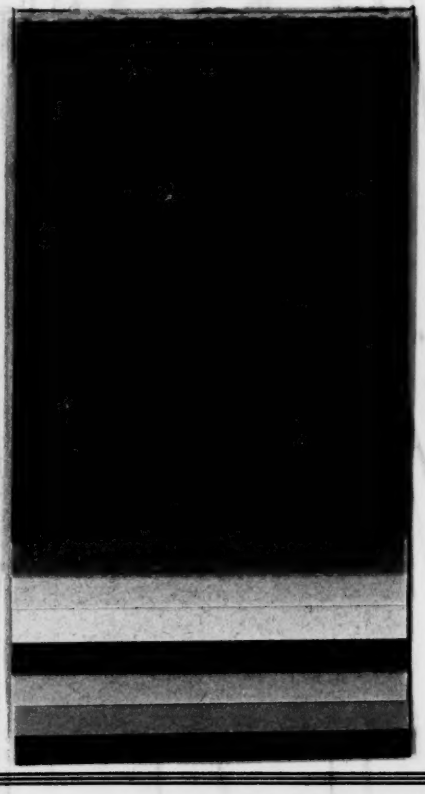
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VELOURS AND WOODGRAINS

The two top swatches show
EXECUTIVE VELOURS in FIFTEEN ATTRACTIVE COLORS



EXECUTIVE VELOURS

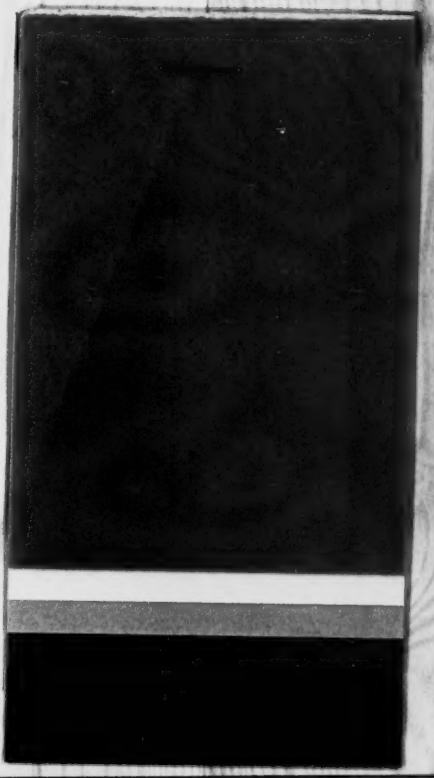
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The FINE SUEDE PAPER of America

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Improved shades and surface

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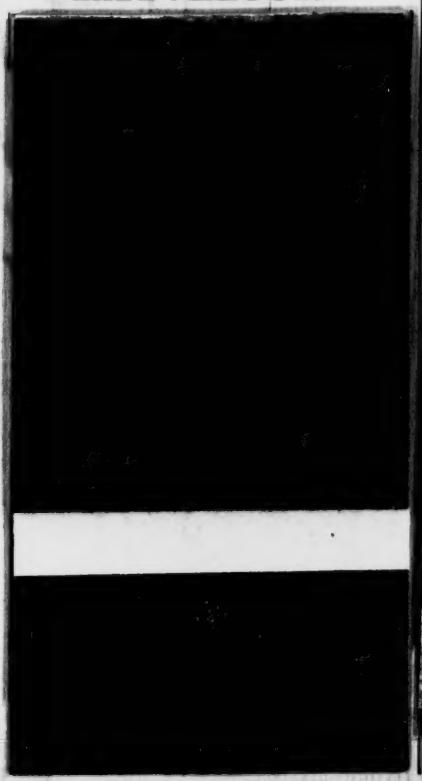
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RAYVELOUR

DISTINCTIVE RICH APPEARANCE

Samples show 5 of the 9 unusual colors

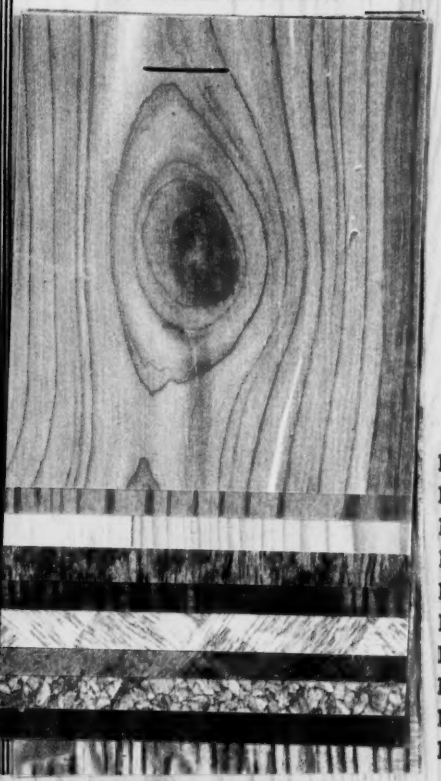
The last sample in swatch is RAYVELOUR DISPLAY BOARD made to order in any of the 9 colors.



1505
1502
1506
1509

Special ..... Made to order.

WOODGRAINS



42 items Unsurpassed by any line of WOODGRAINS

Plain and Lacquered Finish

1451
1482
1449
1452
1460
1489
1483
1471
1439
1462

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See Other Side

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BOX COVERING PAPERS
BLOTTINGS
SPECIALTIES
COVERS



This insert is
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Leatherette and Fabric Materials

The following is a list and description of various types of materials commonly used for box coverings, as differentiated from fancy and decorative papers, lithographed and printed wraps.

Booktex is a line of pyroxylin-impregnated fabrics which is entirely free of oil. It is furnished for box covering in a range of embossings including leather-like grains, geometric patterns, and conventional designs.

Fabkote is a high-grade scientifically developed product having a non-woven cellulosic base. It is attractive in appearance, has a soft glove-like feel, retains embossing, is free from clothiness, and cuts with a clean edge that will not fray. Fabkote is water-proof, washable, will neither scuff nor mar, and is obtainable in a number of different qualities gauged to perform a definite job. It is manufactured to satisfy both high and low tensile and tearing strengths. It has been used to advantage in packaging confectionery and delicate instruments. Available in a wide variety of grains and colors.

Fabrics of all types are following style trends. New attractive colors and patterns are being introduced. Definite progress has been made during the past few years in the manufacture of fabrics, particularly for covering re-use containers and stock boxes.

No. 280 Fabrikoid is a pyroxylin coated paper, water-proof and washable. Firmness makes this material especially adaptable for set-up cases. This particular quality is the least expensive of this group but it is manufactured in a selection of grains and colors.

No. 700 Fabrikoid is a light-weight lacquered fabric, also washable and water-proof. It is manufactured in different pliabilities to serve a greater variety of purposes. Applicable to packages that demand a soft, pliable covering, such as comb or vanity cases; fragile or breakable apparatus such as mirrors use a less pliable 700 Quality. A varied selection of grains and colors are featured.

Fabtex is a rubberized fabric coated on both face and back. It is manufactured in either plain or pyroxylin-coated finishes. Fabtex is water-proof and washable, available in an array of colors and grains. The material is not limited to a single quality but is designed to serve a number of purposes.

Keratex is a line of pyroxylin-coated materials made on a base of fibre treated with Latex to make it pliable, tough and durable. It is particularly suitable for work where flush-cut edges that will not ravel are important. It is generally used in leather embossings. It can also be furnished in fancy grains.

Keratine, a lightweight standard, is most pliable for use in the making of fancy cases, combining a real wear-resisting surface, beautifully embossed, in any color, or combination of colors desired.

Keratol is a line of pyroxylin-coated fabrics made for covering cases and boxes. It is furnished in leather-like effects and also in fancy embossings and colorings. Keratol is now available with an oil-free pyroxylin coating, is easy to work and has even longer life.

Permatex is a lacquered, water-proof, and washable fabric having a lustrous, silky appearance and feel. The surface can be printed and lithographed.

Revolite is not to be confused with leather cloths (pyroxylin-coated). It is quite different in that the coating is a special patented Bakelite resinoid which does not contain rubber or oxidizing oils. It remains flexible and does not harden. It is resistant to mild acids, most chemicals, oils, and greases. It is water-proof and heat resistant. Revolite can be furnished in a wide range of colors, including a variety of metallics and in several qualities.

Sturdetan is an inexpensive leather substitute with a durable pyroxylin coating on a non-woven fibre base. The colors are fast, and the metallic finishes will not tarnish or rub. Sturdetan is washable and water-proof. Wide variety of grains, colors, and embossings make Sturdetan adaptable to hundreds of packaging requirements. Standard width, 40 inches, 250 yards to the roll.

Sturdite is a leather substitute of strong fabric heavily coated with pyroxylin so that even in the heaviest grains the surface does not appear clothy. Various leathers are imitated with a variety of embossings. Water-proof, washable Sturdite is suitable for covering on boxes of fine gifts to be kept in original containers. Metal finishes are also obtainable. Standard width is 36 inches, but special colors and grains are available in 40-inch widths.

Texon is a latex-saturated paper-base product; pliable, tough, and water-proof. Uniformity in thickness and size assures economical handling in plant operations. It cuts cleanly without a ragged edge, handles easily in all stitching operations, and wears well in actual use. Texon is used in packing goods which may be damaged by moisture such as cement, lime, and coal. It also may be used to protect articles which are wet when shipped, as for example, fish or other sea foods.

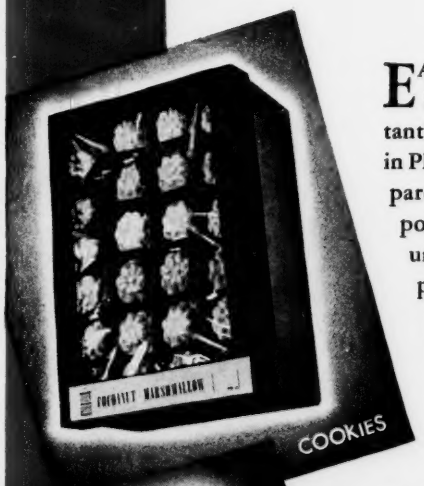
Textileather is a pyroxylin-coated, fabric-base material available in an infinite variety of colors, grains, and finishes. Special constructions, widths and weights have been developed for the packaging industry.

Textiloid and **Texkraft** are pyroxylin-coated, composition-base materials, available in a large variety of colors, grains and finishes. They are produced in gauges ranging from .006 to .100, have high resistance to edge tear, may be skived like leather, handle and work easily and are well adapted to packaging needs.

Velveteen fills a particular lining need in good packaging, especially where a soft cushiony effect is desired, as nothing else can quite give the effect of richness as a luxurious velveteen. Velveteen comes in widths of 18 in., 22 in., 24 in., 29 in., and 35 in., making for a minimum of waste in cutting.


BAYER
THROAT
LOZENGES
10¢
COUGH DROPS
POWDER PUFFS
CHEESE
BLANKETS
CONFECTIONS
MILK
BLACKSTONE
CIGARS
SWIM SUITS
THE BEST THINGS COME WRAPPED IN
GOODYEAR

PRODUCT..AND WE'LL SHOW YOU A *Safer Package!*





EACH of the products pictured here gains distinct and important advantages by being packaged in Pliofilm*—Goodyear's new transparent sheet—a synthetic composition—odorless, tasteless, and unusually tough and moisture-proof.

Pliofilm keeps cheese, cookies, confections and cigars fresh and flavorous *until used* because it seals in their natural moisture.

It keeps cough drops from absorbing moisture; protects their efficacy.

Laminated to paper bags or fibre containers it provides a vacuum-sealed, flavor-tight package for coffee and other products requiring airtight protection—*at lower cost!*

It can be capped on milk bottles to provide sanitary, germ-free cleanliness.

And as a wrap for many types of merchandise its clear transparency gives maximum "eye-buy" appeal while its high durability insures freedom from tearing and splitting in handling. In fact, consumers find many after-purchase uses for Pliofilm packages, increasing the sales value of the wrap.

These are merely a few indications of Pliofilm's wide range of usefulness. It can be sealed moisture-air-tight and lends itself readily to fast machine packaging. If you have a packaging problem it will pay you to investigate. Write: Pliofilm Sales Department, Goodyear, Akron, Ohio.

A Centennial Product of
The Greatest Name in Rubber



*Trade-mark of The Goodyear Tire & Rubber Company

Decorative Ribbons and Ties

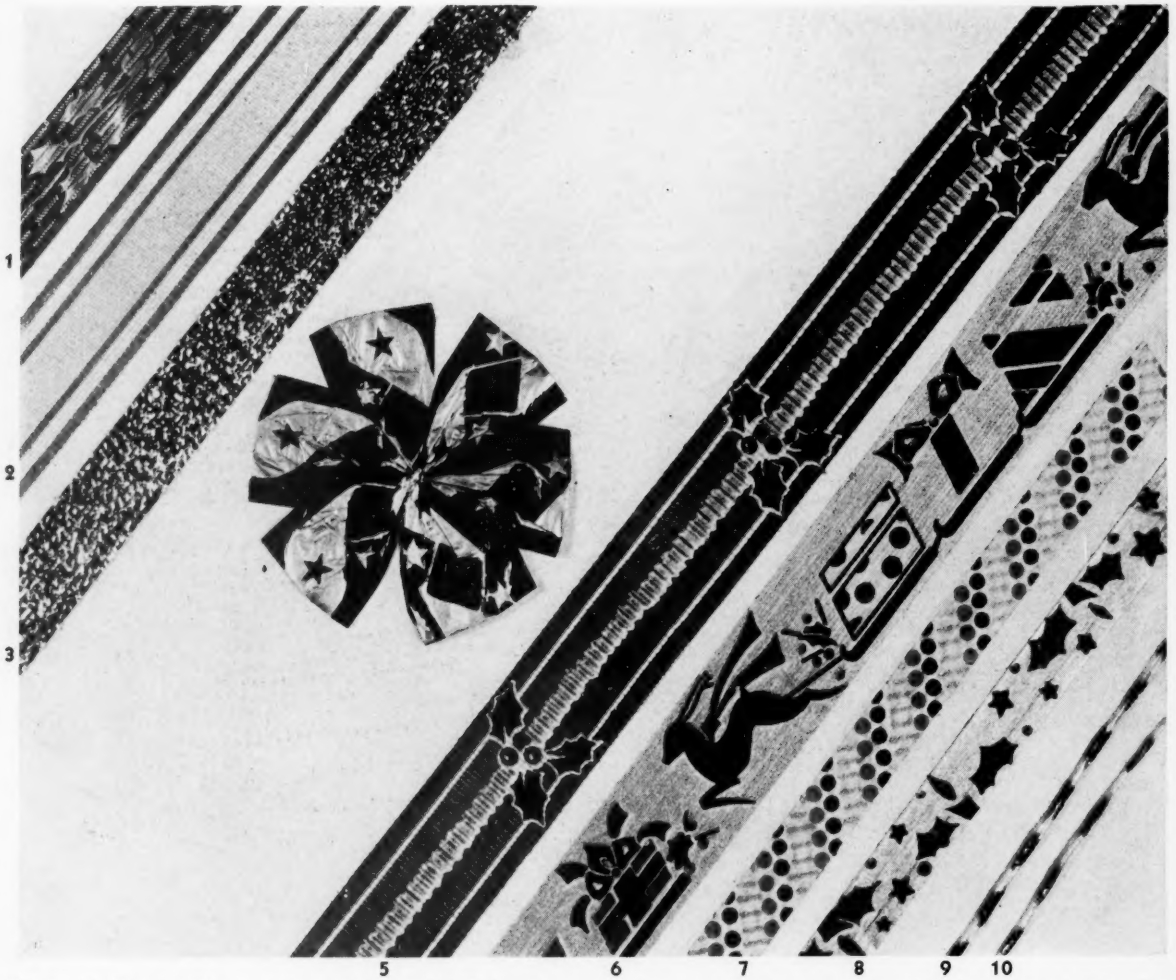
A number of materials are available for the decorative tying of packages. The use of such ties has measurably increased in recent years, not only in the gift field, where these materials have always occupied a prominent place, but in the candy, cosmetic and textile fields and in a number of other industries.

A decorative tie, to be acceptable for packaging purposes, must offer a high degree of beauty plus strength, ease of tying, resistance to soiling and resistance to wear in transit, on display and in the home.

Cotton Ribbons

Printed cotton ribbons are available in all widths from the narrowest to well over an inch. They may be had in several hundred stock patterns or made to order in any color or combination of colors and in any design. Thus patterns can be made to match or complement designs or color schemes of package wraps, box covers, etc., or for direct application as a tie over textile products, particularly where the latter are to be used in transparent wraps or transparent rigid containers.

Since designs can be made to include company names, trade marks, etc., ribbons of the cotton type have achieved very wide adaptation in retail packaging as a form of inexpensive advertising. As purely decorative ties, or as advertising ties, they have likewise achieved



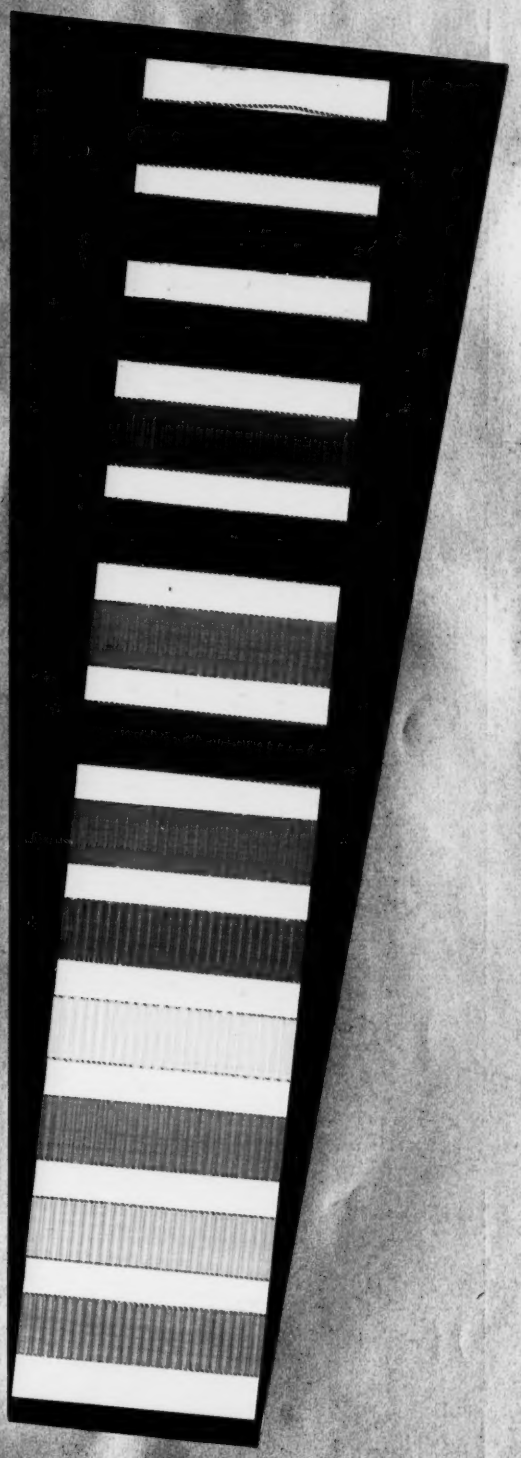
1,2,3. Combination fabric and tinsel ribbons by Hy-Sil Manufacturing Co. **4.** Pre-tied bows by Stark Bros. Ribbon Corp. **5,6,7,8.** Ribbonette printed cotton ribbons, Chicago Printed String Co. **9, 10.** Decorated cords, Fibre Cord Co.

COLOR COMMANDS Attention!

Apply it to your product with

Ribbonette

REG. U. S. PAT. OFF.



RIBBONETTE...

... is carried in stock in widths from 3/16" to 1¼" in a multitude of colors, color combinations and patterns.

... can be made for you in any color or color combination to match other packaging materials or established color schemes.

... can be printed with a name, a slogan or any advertising message.

... has utility value as well as decorative, for it is made of cotton yarns and is exceptionally strong despite its dainty and attractive appearance.

Our Artists, with wide experience in solving packaging problems and a complete knowledge of the possibilities Ribbonette affords, are at your service. Send us some of your packages and let us show you what Ribbonette can do for them.

CHICAGO PRINTED STRING CO.

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A Quarter-Century of Leadership 1915-1940

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A PACKAGE BY PACKAGE Description
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wide usage on factory finished packages, particularly for merchandise for gift selling.

Fabric Ribbons

Ribbons of silk, satin and other fabrics are occasionally used for packaging purposes although their high cost and the introduction of less expensive means of achieving equally attractive effects has tended to limit their use. They are being used, more frequently, as "made-up" ribbons with edgings of colored cellulose or, occasionally, metal foil.

Cellulose Ribbons

Since cellulose is manufactured and printed in rolls, it was but natural that the addition of a slitting process should be thought of as a means of achieving a ribbon form. Today such ribbons are decorated, cut, treated and folded to form a tie with reinforced edges, great strength and beauty. Multicolor effects are practically unlimited. Many stock patterns are available and private patterns can be made with to meet individual requirements with comparatively low set-up costs.

Cellulose ribbons may be had in completely transparent form, in tinted transparent types, in opaque types, printed designs and fabricated in combination with foil, fabric and other materials. Widths range from $1/4$ in. to 4 in. and more. The turned-in edges prevent fraying and the smooth surfaces of the cellulose base avoid soilage. Since the cellulose is sterile, such ribbons may be used in conjunction with food products.

Rubber Derivative Ribbons

A new development involves the fabrication of Pliofilm, a rubber derivative sheet material, into ribbons. In color and decoration these closely resemble the cellulose



11,12,13. Holiday patterns on cellophane ribbon by Fibre Cord Co. **14, 15, 16.** Three varieties of Pliofilm ribbon manufactured by Freydberg Brothers, Inc. **17, 18, 19.** Plain and patterned cellophane ribbons by Freydberg Brothers, Inc.

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20, 21. Two groups of gift boxes wrapped with holiday papers and tied with printed cotton string. Note the effective bows and rosettes which can be achieved. Ribbonette by Chicago Printed String Co.

ribbons. In addition, they are water-proof and may thus be used for various purposes for which the ordinary types would not be applicable.

The ribbon has high resilience and high resistance to tearing, may be tied into tight knots and then untied and smoothed out without showing wear. The material may be stitched, glued or serrated on one or both edges and thus lends itself to a number of applications where other materials have not been successfully applied before.

Cellulose Cord

Cellulose cord utilizes a core of rayon, cotton thread or wire around which a cellulose film has been twisted. The material is available in many colors, a number of multi-tone effects and in various gauges. In addition to use for box ties, this material is used for neck tying of cellulose and fabric bags and for tag tying.

Pre-tied Bows

Ribbons of various materials are available in bows, pre-tied and with any specified length of flat ribbon extending from either end. Such bows may be attached to the package by adhesive, staples or other medium, at a pronounced saving over methods involving tying of elaborate bows directly on the package.

We are indebted to R. A. Bayer of Fibre Cord Co., R. L. Heard, Chicago Printed String Co. and N. J. Strauss of Freydberg Brothers, Inc., for information and aid in the preparation of this article.

Package Sealing Tapes

The hundreds of millions of little strips of kraft paper on packages, boxes, envelopes, etc., are such a common sight that many packaging men take gummed tape for granted without realizing that interesting developments have taken place in the tape-sealing field during the last few years. This is true not only of its uses, but also of the interesting new machines which have made taping a different thing than it used to be, in certain fields.

Only a limited portion of the trademarked merchandise sold in this country is adaptable to packing by automatic wrapping machines. There remains a large field of trademarked merchandise which still has to be hand-wrapped, and which can be effectively packaged by a judicious use of printed gummed sealing tape or printed gummed labels.

Gummed sealing tapes are usually made of kraft paper gummed with a good grade of animal glue. Three standard weights, according to the Department of Commerce Simplified Practice Recommendations, are 35 lb., 60 lb. and 90 lb. These are basic weights before gluing.

Mechanical feeding and moistening devices have been developed to meet almost every imaginable need. They range from the simple tear-off type moistener to units equipped with automatic measuring, moistening control and cut-off devices. These machines are treated in detail in the article "Tape Sealing Shipments."

Heat-Sealing Tapes

The latest development in the sealing-tape field is the so-called Thermium heat-sealing tape. This tape does not need to be moistened at all. Nor is it tacky like

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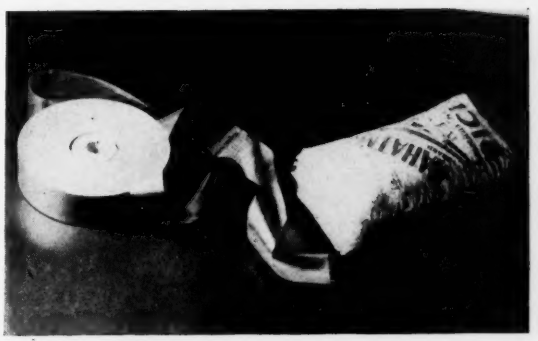
1. Applying heat-sealing (Thermium) tape. **2.** Used for sealing plain transparent cellulose bags. **3.** Used for sealing waxed paper bags. **4.** Used for sealing metal foil bags. Photos courtesy of Seal, Inc.

the widely used Scotch tape. It feels like an ordinary strip of paper, but when hot-pressed onto a bag or package it sticks instantly and tightly. It has attracted wide attention because it sticks tightly to plain transparent cellulose and to metal foils. It also makes possible the taping of waxed-paper bags and packages.

There is Thermium paper tape (made of paper), Thermium cellophane tape (made of cellophane), and Thermium cloth tape (made of cloth). The word Thermium is the trade name of the heat-sealing adhesive with which these tapes are coated.

A feature of this tape is that it can be placed on the package *dry* and can, therefore, be *accurately located*, the "moistening" being done by means of a small heated applicator about the size of a large rubber stamp.

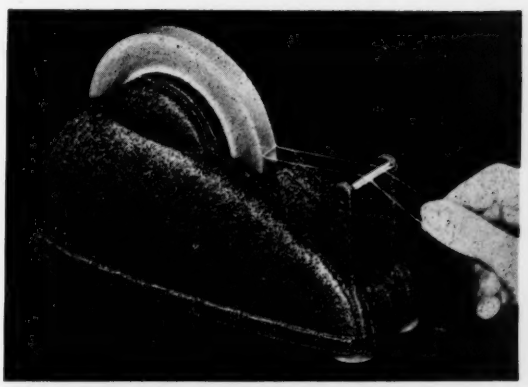
For sealing transparent cellulose bags, foil bags and paper bags, the conventional heat-sealing machines used for crimping can be used with slight modifications. For other applications a small hot plate is used, the strip of tape being laid face up on the plate and the package merely placed on top of it, thus effecting a tight seal. This new sealing tape has extremely interesting possibilities in industries such as meat packing, confectionery, bakery, etc. The adhesive on this new tape is odorless, tasteless and non-toxic.



5. Thermium cellophane heat-sealing tape.

Scotch Cellulose Tape

Single thickness cellulose ribbon is adhesive treated to provide a transparent tape for sealing light shipments, mending, attaching small items to cards, etc. The adhesive is tacky and provides a firm seal. Specially designed dispensing devices are available.



6. Scotch cellulose tape with dispenser and cut-off device. Photo courtesy Minnesota Mining & Manufacturing Co.

Shredded Paper and Cellulose



1



2

Shredded paper, as its name implies, consists of long slivers of paper materials forming a resilient mass useful in packaging as a protective padding or cushion. In this respect, it provides a number of advantages over excelsior, since it is somewhat less inflammable and it does not break down into dust and lint.

Originally old paper was utilized and aesthetic considerations ignored. Much such shredded paper is still used for packing items into crates for shipment.

However, packagers have found that decorative varieties frequently meet special needs. Waxed glassines, cellulose sheets, plain, colored and fancy papers are today shredded to provide cushioning effects of great beauty, capable of being used in conjunction with the finest packaging materials.

For irregularly shaped objects which do not lend themselves readily to standard sizes of containers, shredded papers serve as the means of adjusting to the size of the outer pack. This is true in the case of fruits, baked hams, etc. Glass packed products, packaged in multiple units for gift sets and sampling purposes, are likewise very frequently protected by shredded paper in one form or another.

1. Shredded paper used as packing for instruments. Courtesy Pioneer Paper Stock Co. **2.** Packing room scene showing use of shredded paper. Courtesy Dennison Manufacturing Co. **3–4.** Containers for multiple package items using shredded transparent cellulose for cushioning and decoration.

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BAGS

SECTION FOUR

Pages 147 to 172

PAPER BAGS: TYPES AND USES

TRANSPARENT CELLULOSE BAGS

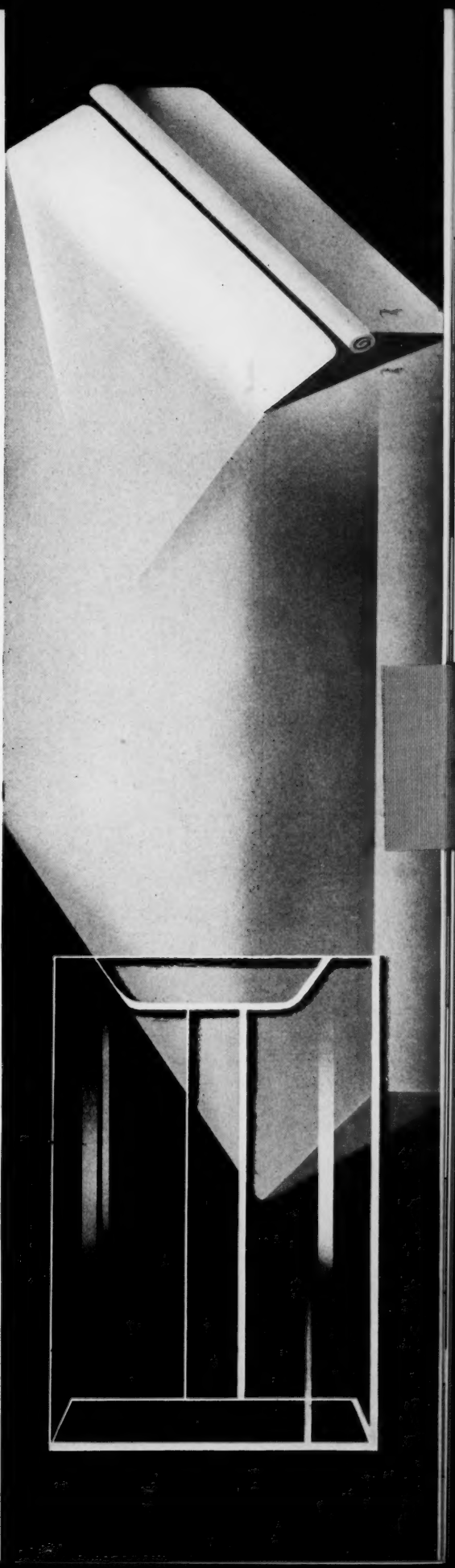
METAL FOIL BAGS: TYPES AND USES

BAG CLOSING AND SEALING METHODS

MERCHANDISE ENVELOPES AND PACKETS

HEAVY DUTY MULTIWALL PAPER BAGS

COTTON AND BURLAP BAGS



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1. Flat bag with straight plain bottom.



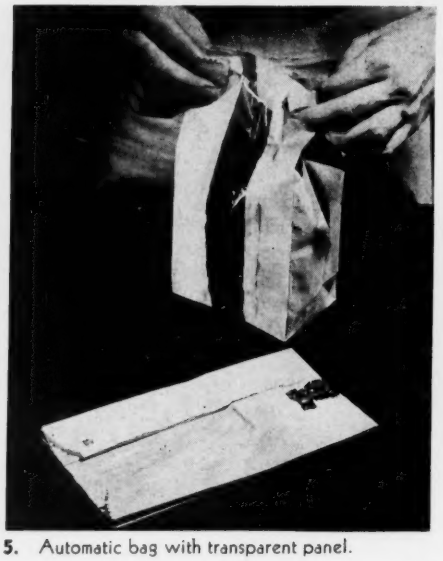
2. Square back bag showing forming of bottom.



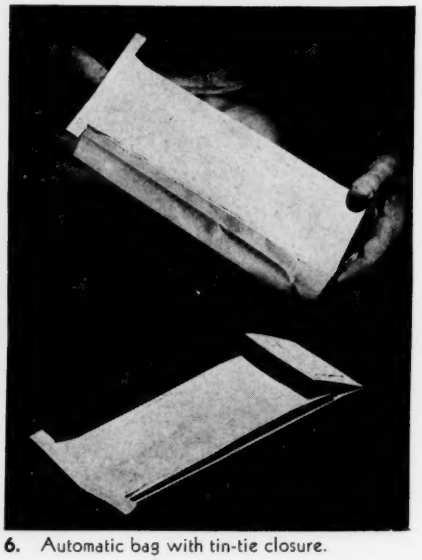
3. Satchel bottom bag.



4. Automatic bag.



5. Automatic bag with transparent panel.



6. Automatic bag with tin-tie closure.

Paper Bags: Types and Uses

by GEORGE E. CHISHOLM*

In the cracker barrel days, a paper bag was just a container. Today, the paper bag enjoys a prominent place in the merchandising of a wide variety of commodities. This change was made possible through advancements in the art of paper making and printing. The pace of this advancement was quickened through the competition of other types of packaging materials which have made great strides in the field of packaging through the development of automatic machinery.

Improved papers made more attractive bag packaging possible and, at the same time, provided better printing surfaces for improved design. Multi-color printing machinery, built especially for bag printing, has provided shelf display value which has placed the paper bag on a par, in this respect, with other types of packages found on the retailer's shelves.

Automatic packaging machinery has further strengthened the position of the paper bag by making high speed packaging possible.

* Sales Promotion Manager, Union Bag & Paper Corp.

XUM

"Neither snow, nor rain, nor heat, nor gloom of night stays these couriers from the swift completion of their appointed rounds"

Herodotus



Cardinal Richelieu used those words in dedicating the first French Postal Service. We like it . . . believe it was well said, and say the same of modern Bagpak Cushion Stitch Bags. All over the world today, the Cushion Stitch Bag is safely transporting the finest products of industry. There is not a minute or hour or day of the year that does not see them in actual service over the lines of our common carriers and in the holds of vessels engaged in World Commerce.

"One Man Package"
"Easy to Handle"



TRADE MARK
REG. U. S. PAT. OFF. *

For economical packaging efficiency, we suggest your investigation of The Bagpak Method . . . a combination of tough, strong, heavy duty multi-wall paper bags and modern packaging machinery.

BAGPAK INC *

220 East 42nd Street New York City

There are seven advantages which, alone or in combination, give the paper bag its place in the packaging field. These are:

1. Economy
2. Protection
3. Identification
4. Unit of Measure
5. Liners
6. Display Package
7. Shipping Unit

Here are some typical examples of the application of paper bags to these fields of usefulness:

Economy: Early in 1935 a prominent coffee roaster was able to capitalize on a unique distribution system to change from a relatively expensive container to a less expensive, yet attractive and efficient paper bag. By doing this, the coffee roaster found it possible to reduce the price of his coffee to the consumer, and increase the market for his product.

Protection: Sugar refiners are now packing consumer units of sugar in sift-proof bags which are filled and sealed by automatic machinery. These double-walled paper packages offer complete protection to the sugar in its journey from the refiner to the wholesaler, retailer and consumer. Refinery purity is delivered to the kitchen because the paper package protects the sugar from dust, dirt and contamination.

Identification: In order to protect themselves from the activities of "bootleg" parts manufacturers and to make sure that dealers and car-owners get genuine factory replacement parts, the larger automobile manufacturers are using paper bags (as well as other types of containers) to identify parts which are not easily stamped or trademarked.

Unit of Measure: Often it is desirable that the ultimate users of the product receive a pre-measured quantity. A common example of this is in the case of coffee urns and other coffee-making devices, where a uniformly good cup of coffee can best be obtained by using the same pre-determined quantity of ground coffee for each batch. The inexpensive and easily opened paper bag is ideal for such purposes.

Liners: Many dry products which are packed in tin or in cartons, need to be kept from contact with the wall of the container. Most manufacturers of drug products and other dry materials find paper bags indispensable for this purpose.

Display Packages: While the paper bag has long served as a display package for such products as coffee and flour, the advent of transparent cellulose and combination cellulose and paper bags, and the vast improvement in bag printing, have transformed the paper bag into a package of exceptional display value.

Shipping Unit: For non-rigid or semi-rigid products the heavy paper bag recommends itself as the most economical shipping container available. The heavy square bag used for shipping twenty-four one-pound units of coffee safely and economically is a good example of this field of service.

There are four shapes of bags available. These are, namely, the flat, the square, the satchel bottom, and the automatic or self-opening. Each shape serves its own specific purpose and has its own advantages and disadvantages over the other shapes. A brief discussion of these follows:

The Flat Bag: This shape, as may be seen from the accompanying illustration, is simply a tube of paper with one end turned over and pasted down to form the bottom. Due to its more rapid speed of production this is the most economical shape of machine-made paper bag. However, since it has no gusset or tuck at the side, to preform the bottom, the contents will necessarily bulge out. In many cases this is an advantage since it gives the appearance of extra bulk or quantity whenever or wherever the package is displayed.

The Square Bag: This differs from the flat bag in that it has a tuck or gusset at each side. The bottom can be formed by thrusting the hand inside of the bag and squaring it out. Because it has three definite dimensions, the square bag is better adapted to package articles of a cubical form.

The Satchel Bottom Bag: This shape is made from a flat tube without tuck or gussets in the side, but does have a small diamond shaped pre-formed bottom. The chief advantages of this shape are:

1. Its wide mouth which makes filling easier.
2. Its pre-formed bottom which enables the bag to stand upright while being filled.

The Automatic Bag: This shape, sometimes known as the self-opening, is in some respects the most efficient of all machine-made paper bags. Due to the extreme complications of manufacturing the square preformed bottom, it is relatively more expensive than the other shapes of machine-made bags and somewhat more inflexible in its available combinations of dimensions. It can, however, be opened easily and stands absolutely upright, either empty or filled.

Design Considerations: Bags are printed with molded rubber plates and it is, therefore, unwise to have a design incorporate too fine reverse work or lines too closely spaced, for this makes it almost impossible for the engraver to etch deeply his ink plates from which the rubber plates are molded.

Printed matter should not fall on the paste lines of the bag as the adhesive will dilute the oil ink, causing it to run and blur. Designs should not end exactly on the fold of the bag for it is hard to hold the form constant and at the same time maintain maximum production speed. Designs should not be too close to the sides or bottom of the bag if it is to be run on a rotary press, since it is necessary to allow sufficient clearance to carry the bag through the printing press without causing the ink to smear.

It will be noted that all of these considerations are imposed upon the designer by the nature of the bag making and printing process. Packagers will be well advised to consult closely with their bag suppliers prior to final decision on bag designs and thus to eliminate production problems requiring unusual handling or slow speed production.

XUM

The FLAT TIN CAN



POSITIVE PROTECTION

FOR PRODUCTS THAT EAT THROUGH PAPER OR REQUIRE SECURITY FROM MOISTURE

Appealing to your customer...relieving you of worry, the FLAT TIN CAN prevents waste and spoilage and unnecessary expense. It is invaluable to horticulturists for seeds...to pharmaceutists for tablets and powders...and to YOU for any product that eats through paper or requires protection from moisture.

The FLAT TIN-CAN TRADE MARK REGISTERED

PATENT NO. 2,139,654

BALTIMORE PAPER COMPANY

345 HUDSON ST.
NEW YORK CITY

Manufacturers of all kinds of PACKAGE ENVELOPES

819 E. 19TH ST.
KANSAS CITY, MO.



1



2

1. Printed transparent cellulose bags loaded with cookies positioned and protected by cardboard dividers. Bags have paper seal covering and stapled closure. Courtesy The Dobeckmun Co. **2.** Printed transparent cellulose in roll form is used to form these pillow shape heat-sealed bags directly on the filling machine. Courtesy Milprint, Inc.

Transparent Cellulose Bags

by JOHN M. COWAN*

There are now practically no limitations to the packaging purposes to which transparent cellulose bags may be put, except those set by the size, shape, weight, liquidity or some other characteristic of the product to be packaged.

Protection problems met with in the packaging of foodstuffs and other perishable, easily damaged products have been effectively solved by the development of numerous special grades and weights of transparent films. Bag construction has been perfected to the point where sturdy, single-wall and double-wall bags are now available in many different styles, and in innumerable sizes and shapes to suit almost every package requirement. Printing has also progressed, and transparent cellulose bags may now be printed by letterpress, aniline or gravure, in from one to six colors, using type set-ups, zincs, half-tones or full color process plates, effects being obtainable that favorably compare with printing on paper or metal containers.

Visibility still remains the principal reason for packaging in transparent cellulose bags, although in many instances where such containers are adopted this sales-quickening virtue of perfect transparency may or may not be one of many extremely powerful incentives prompting their use.

It is safe to say that, if a product possesses any sight appeal at all, transparent cellulose bags will increase its sales materially. In the first place, such visible packaging makes a strong appeal to the retail merchant, leading him to give it preferred space on counter, table or shelf. In the second place, the brilliance and flash of these units attract many more eyes than packages of more subdued, less striking appearance. This leads to many purchases on the impulse of the moment and a consequent upswing in total sales.

Another important sales-making attribute of transparent bag packages is the buying public's invariable acceptance of all such packages as being *fresh* and sanitary. The reason is that the products can be seen, can be felt, and yet cannot be actually touched or contaminated in any way.

Protection now also ranks high as a motive for the use of transparent cellulose bags in packaging many products. In contrast to transparent cellulose wraps, or wraps of semi-opaque materials, such pre-formed containers afford tighter, sturdier packaging. Where extra strength is required, double-wall bags are available; where such qualities as moistureproofness, semi-moistureproofness, air-tightness, water-tightness, resistance to oil and grease penetration, or other protective qualities are demanded in a container, custom bags made of special transparent films may be had.

* Advertising Mgr., The Dobeckmun Co.



Take a hint from the leaders and give your product the sales advantages other products are enjoying in attractive, inexpensive Bags by Royal.

No matter what your product may be, you will find that Royal has exactly the type of bag you need — either paper, glassine or Cellophane.

Paper bags, like those illustrated, are strong, attractive and economical. Many companies are finding them a big asset in uncovering new profits.

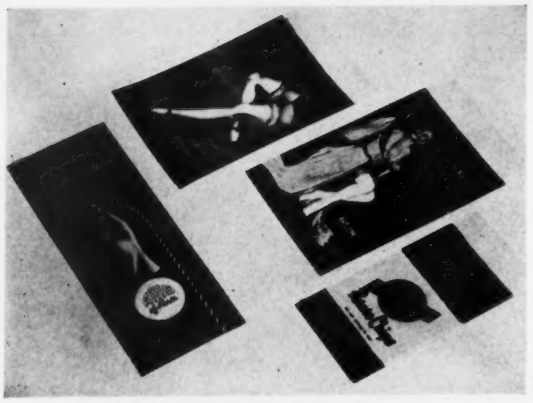
Royal will be glad to submit suggested designs for bags for *your* product. Write for complete information.

THOMAS M ROYAL & CO

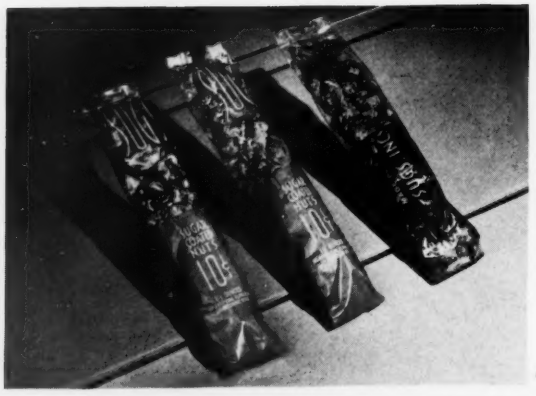
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NEW YORK CHICAGO DETROIT PITTSBURGH BOSTON ST. LOUIS MINNEAPOLIS
SAN FRANCISCO DAYTON SYRACUSE FORT WORTH ATLANTA HOUSTON

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3



4



5



6

Styles of Bags

Transparent cellulose bags are manufactured in three standard styles—Satchel Bottom, Square, Flat.

Satchel Bottom Bags are the most extensively used, this type finding its largest use in stock, unprinted sizes employed by retail stores for the "store packaging" of bulk items such as peas, beans, rice, nuts, sugar, spices, hard candies, tapioca, prunes, etc. When filled, Satchel Bottom Bags have flat bottoms that permit upright display without support. In Satchel Bottom Bags, also, the proportion of height to width provides a more attractive package than the same size Square Bags would.

Square Bags enjoy the most diversified use due to the variations that can be had in their length, size of side tucks and face width. They are used to package all sorts of edible items, textile products, hardware, etc., etc.

Flat Bags find their principal use in the packaging of light objects such as nuts, potato chips, etc., where "bulging" produces an illusion of larger quantity, and for hosiery, gloves, textiles, etc.

All three types may be secured in either single-wall or double-wall (Duplex) construction. Duplex bags are used where extra protection against shipping or handling hazards is required or where the weight or bulk of the packaged commodity makes necessary greater container strength. Specific protection requirements are met by having the inside and outside walls of the bag made of different films.

In the past year, there have been many interesting developments in making transparent bags stronger, easier to load and more airtight. Transparent bags can now be obtained that are completely siftproof, even for very fine granular products. It is now possible to have transparent bags made in such a manner that they are watertight; this feature is of tremendous importance in packaging "wet" frozen foods like strawberries, etc.

Printing may be had on either the inside or outside of the bag walls. Printing on the inside of the film is known as "reverse printing" and is used when added brilliancy is an advantage and when there is no possibility of the printing inks affecting the packaged commodity. In the case of Duplex Bags, printing is usually done in "reverse" on the inside of the outer wall.

3. Flat bags or envelopes as used for hosiery, gloves, or even potato chips. Courtesy Shellmar Products Co. **4.** Printed cellulose bags for sugar coated nuts. Note that bottom of bag is opaque, thus hiding unattractive sugar flaking. Courtesy Thomas M. Royal & Co. **5.** Transparent bags for confections and textile products. Courtesy The American Paper Goods Co. **6.** Printed transparent bags for dog foods. Courtesy The Dobeckmun Co.

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The MILPRINT Line

..YOUR COMPLETE PACKAGING CATALOG....

check your requirements Milprint can supply them

- Cellophane Bags
- Printed Cellophane Wrappers
- Printed Cellophane Rolls
- Revelation Wraps
- Revelation Rolls
- Revelation Bags
- Glassine Wraps
- Glassine Rolls
- Printed Foil
- Perfecto-pac Pie Bands
- Simplex package for Cakes, Pies, Sweet Goods, etc.
- Snap-on Rings for Pies, etc.
- Lithograph Displays
- Display Cartons
- Window Cartons



48 ARTISTS

Milprint maintains a unique staff of 48 artists—everyone an experienced specialist in package design. A creative service second to none!



94 REPRESENTATIVES

There is a Milprint packaging engineer living near you—an alert, thoroughly trained expert—ready to go to work on your packaging problems.



3 FACTORIES

Three great modern plants—the last word in modern technical development—to assure you high quality and prompt economical deliveries.

MILPRINT, INC.

MILWAUKEE • PHILADELPHIA • LOS ANGELES



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e are two new items on the market—a Shoe Polishing Outfit and Electric Presser. The leatherette case, flannel shoe mit and bag with p-fastener are of our manufacture.



To prevent Silverware, Brush and Mirror Sets, and other delicately finished and valuable articles from becoming scratched, our non-tarnishing cotton-lined paper bags are the perfect wrapping.



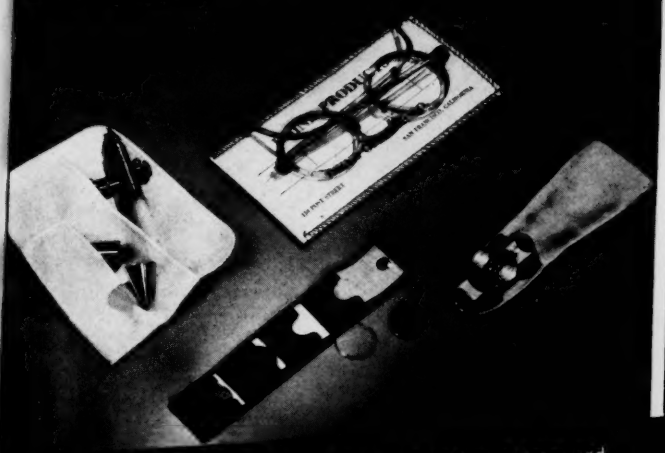
icles such as Compasses, Manicure Implements, d Metal Rules should have suitable cases, such as e above in leatherette.

SEWN CONTAINERS

THE SOLUTION OF MANY PACKAGING PROBLEMS



A fishing reel and a pipe are close companions. Here they are shown with our non-tarnishing flannel and velveteen bags, with snap-fastener or drawstring, as preferred.



ir Brushes, Photographic Filters, Range Finders, Eye-Glass Frames and milar articles deserve protection. These non-tarnishing flannel, leatherte, and cotton-lined paper bags and envelopes give it.



Metal Novelties, Vanity Cases, Jewelry, Mirrors, etc.—need not worry about their highly polished or enameled surfaces in our non-tarnishing flannel and cotton-lined paper bags, as pictured above.

If you think a Sewn Container might be the answer to your packaging problem, consult us. We design and manufacture almost every type of Sewn Bags, Envelopes and Cases.

Cottonluxe Manufacturing Co.

593 East 137th St.

New York

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Metal foil bags and envelopes as used for beverage powders, potato chips, coffee and confections.
Courtesy Reynolds Metals Co., Inc.

Metal Foil Bags: Types and Uses

Metal foil bags are used primarily for the packaging of oil-bearing food products which are susceptible to rancidity. They have been widely adopted in the potato chip industry for this reason and are utilized for coffee, pretzels, cheese sticks and similar items.

The metal bag consists of a thin sheet of shiny, flexible aluminum metal laminated to paper (glassine, greaseproof, bond, cellulose, etc.) and formed into a bag. The metal surface is usually exposed and when printed in bright colors results in a package having powerful eye-appeal on dealers' shelves.

Surpassing the eye-appeal value of the metal bag, however, is its remarkable protective properties, of which the limited scope of this article permits only a brief description. Foremost among these protective features is the fact that the metal bag excludes all light—light which otherwise causes rancidity and spoilage. For example, such products as potato chips and salted nuts are especially sensitive to light, only a couple of hours' exposure being sufficient to cause a photo-chemical reaction to take place and this results in rancidity.

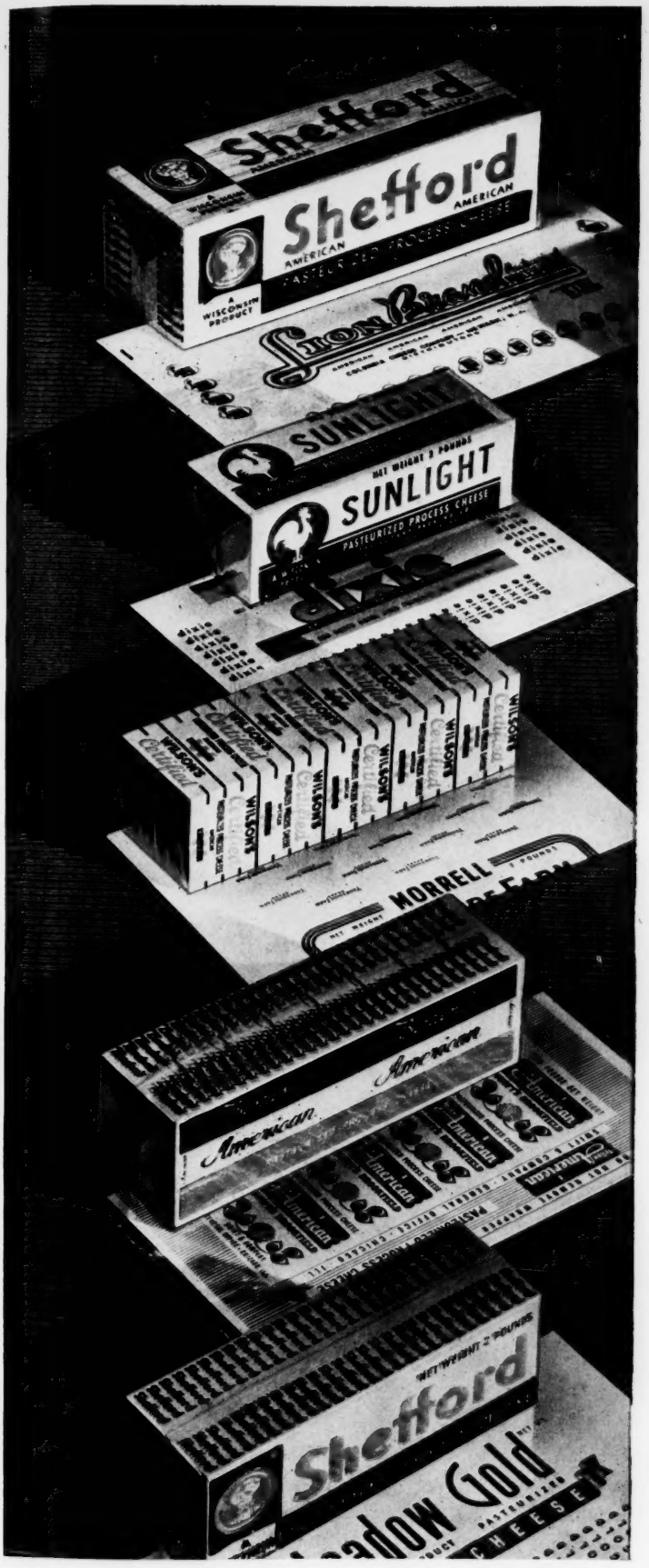
A second important feature of the metal bag is its high resistance to moisture transmission. In one reported test, metal bags of potato chips, after 40 hours continued exposure to saturated atmospheric conditions (95–100 per cent R. H.) at 100 deg. F., showed only 0.99 per cent moisture absorption, against 18.70 per cent absorption by a non-metal bag under identical conditions.

Metal bags are also reported to have extremely high resistance to insect infestation.

Metal bags are made in both the square type and flat type, and both are available in the duplex style, that is, with an extra inner liner of glassine, parchment, greaseproof, or other papers.

The bags are used either inside an outer paper carton or can, in which case they are unprinted, or used alone when they are printed in one, two, or more colors. Tin ties can be provided which give the bag an excellent closure and a re-seal device enabling the consumer to securely close the bag each time, thus keeping the contents in better condition.

XUM



for instance Cheese

AN EXAMPLE OF PACKAGING INGENUITY

A year ago who would have visualized cheese in a transparent bag! Yet here it is thanks to heat sealing, Pliofilm and U. S. E. printing and converting facilities.

Producing transparent bags and envelopes in the widest variety of styles of any source, U. S. E. has every modern facility for turning out a better built transparent package for you.

U. S. E. designers and technical men bring to your job the collective experience of many years of packaging almost every sort of product for which a transparent container is a sales aid.

U. S. E. is equipped for all cellophane printing techniques. And an important feature of your U. S. E. package will be the brilliant quality of the printing best suited to your product.

TRANSPARENT CONTAINER STYLES

E-Z-PAC Square Expansion Bag

E-Z-PAC Satchel Bottom Bag

Die Cut Envelope

Pac-Ket Envelope

Display-Pac Envelope

View-Pac Envelope

E-Z-PAC Flat Bag

Transparent Container Division
UNITED STATES ENVELOPE COMPANY
Springfield, Mass.

Bag Closing and Sealing Methods

by E. G. KUHN*

The past year has further emphasized a pronounced revival of interest in the bag as a consumer or retail package. Today we find this most economical of packages offering an interesting combination of merchandising appeal and practical adaptability to a wide range of staple items. A vastly expanded choice of materials which can be successfully fabricated into bags, an innumerable array of finishes, decorative effects and combinations of these materials offer a distinct challenge to more expensive types of packages.

Abreast of this trend we find fully developed equipment in wide variety designed to establish with the handling of bags the same high standards of packaging efficiency heretofore confined to other forms of containers. Bag construction, materials and equipment, however, are each important phases of packaging in themselves and it is therefore our purpose to present only a brief outline of some of the more widely used seals or closures employed on the modern retail or consumer sizes of paper bag package.

It can be assumed in reference to each type of seal that maximum packaging economy, as well as standardized effect, is possible only through the use of the equipment which in almost every case has been developed concurrently with the introduction of the seal, or later as a means of adapting it to modern production requirements.

The Allison closure: Seals contents with a triple fold which is further re-enforced by a strip of gummed tape. Folds are pressed firmly against contents while

* Consolidated Packaging Machinery Corp.



1. Allison closure



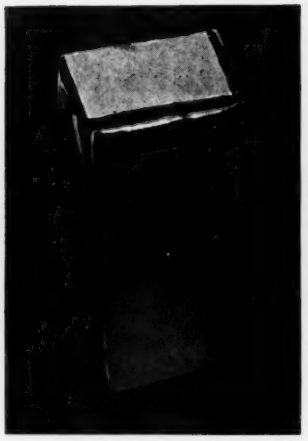
2. Tin-tie closure.



3. Deltaseal closure.



4. Sealtite closure.



5. Square top or flat closure.



6. Hesser closure, foil bag.

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LEAKPROOF

THE *Super-Seal* BAG



Now you can have a "Leak-proof" Package — Easy to Fill —Easy to Close—Low Investment — Faster Production — Tasteless and Airproof.

WRITE TODAY FOR SAMPLES

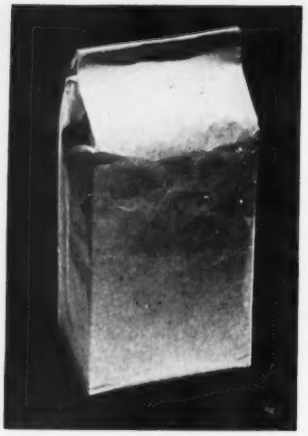
QUALITY BAGS OF

Cellophane
TRADE MARK
THE DU PONT CELLULOSE FILM

THE "SUPER-SEAL" BAG, PATENT NO. 2,114,855

THE MUNSON BAG COMPANY

1384 WEST 117TH ST. CLEVELAND, OHIO



7. Wire staple closure.



8. Metal clip closure.

tape is rolled down bag sides. Good protection for product and easy stacking.

The Betner seal: Employs a tin tie strip which is attached in an exposed position to the bag top by a machine which completes the regular over and over fold and folds in a metal tie.

The Delta seal: Folds bag top to produce oblique overimposed folds and in manner which when cut according to instruction produces a pouring spout for contents. The top of the bag when sealed presents a flat surface well adapted for stacking.

The Sealtite closure: A simple and extremely practical over and over fold which produces a compact, flat topped package with excellent merchandising appeal. Adaptable for intuck or gusseted bags of either paper, cellophane or foil, a tight, sift-proof closure is claimed.

The Seal-Tie closure: A modified use of the metal strip here preserves the re-sealing advantages, but confines the use of this feature to the secondary closing of the bag. The primary seal consists of an over and over fold securely pasted flat against top. A compact package with good display value.

The square top or flat closure: (Also known as the Hesser), uses a card which is placed inside the bag in most cases. The bag top is folded down and sealed by gluing with a top label (not gummed) glued on in addition. This type may be varied in at least two ways. For easy sifting products like sugar, the gluing is done in a different way and sometimes the top label is left off. Then the outer wrapper is die-cut, folded, and glued top and bottom in a manner suggesting a band label which extends around the face of the bag.

The Tin-Tie closure: Supplements standard bag construction with a paper covered strip of metal, which patented feature is licensed to various bag manufacturers on royalty basis. Offers excellent re-sealing advantages at some sacrifice of absolute protection of contents. Wide variation of finished package effects obtainable. Automatic machines have now been developed for applying this closure.

The Wire staple: An economical and, in certain instances, an entirely acceptable closure for both paper and cellophane bags. Classified as tamper-proof, although offering little resistance to moisture.

The Bagpak cushion stitch closure: Used only on paper bags, especially of the multiwall type. This requires a machine to apply and, in combination with a machine sewed snake stitch, this closure is stronger than the walls of the bag.

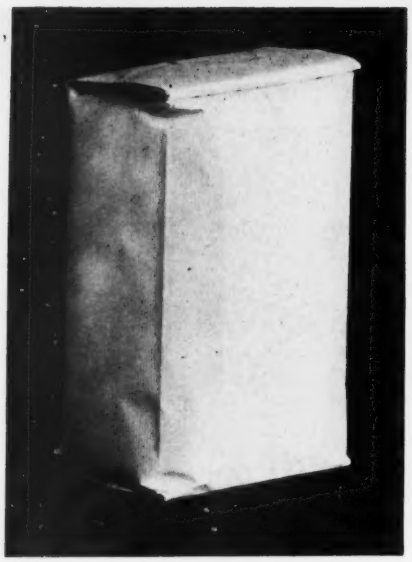
Each type of seal illustrated and described has certain advantages which should be taken into careful consideration, not so much on the basis of general merit but rather from the standpoint of meeting the particular requirements presented by the product itself, the market it serves, competitive packaging and similar vital factors. Complete information is available to those interested.



9. The Hoffman "cut-and pour-reseal" bag, a type which may be sealed by folding over the bag top, either stapling or taping. The consumer cuts the corner of the bag on an imprinted line and the gusset is pulled out to form a pouring spout. The bag may be resealed by replacing the spout and applying a metal clip.

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FROM
Powdered
Salted
SOUP to NUTS
A. P. G. Bags, Envelopes and Cups Are Being Used to PACKAGE Hundreds of Products
Let Us Help You with Your Packaging Problems
THE AMERICAN PAPER GOODS CO.
KENSINGTON, CONN.
CHICAGO, ILLINOIS



10



11

10. Square bag, filled and closed with automatic machine. Pasted closure. **11.** Satchel bottom bag, closed by tying. Photos courtesy of the Consolidated Packaging Machinery Corp.

Methods of Bag Closing

With the exception of the stapled bag—and this too may be closed by automatic instead of hand equipment—all of the closures shown require machine units for sealing. Such units for folding and sealing are usually integral with or included as a part of the weighing equipment customarily used.

In the closing of the larger-size bags there is a definite advantage, provided of course, that production conditions are equal, in machine versus hand-closing of bags. According to actual figures, obtained at one plant where both operations were used, the cost of machine sewing is approximately one-third that of hand sewing.

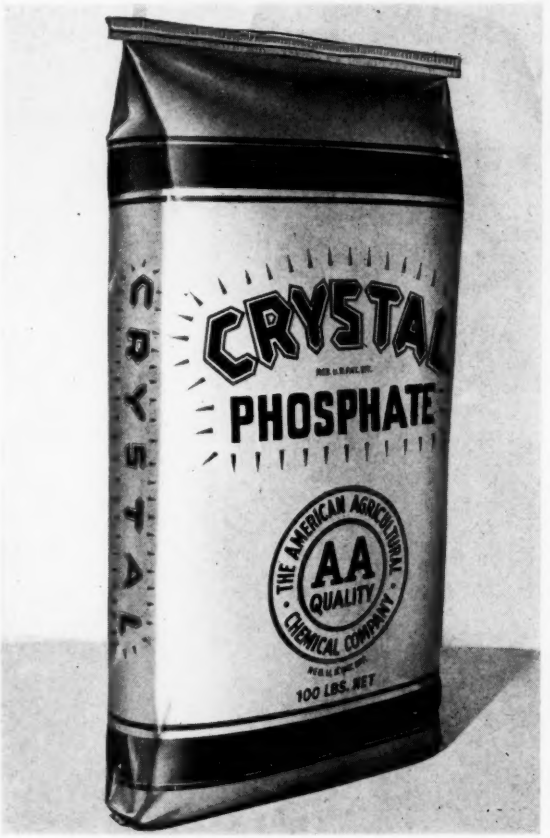
In general, the consideration of bag closures is of equal importance with that of the material from which the bags are made and their construction. It is essential, then, that manufacturers of bag closures and machines for forming them be freely consulted.

Comparative Checking Points

Bags as used by manufacturers and shipped sealed from the factory, must be judged by much more severe standards than would be applied to the ordinary bag used by the retailer or to the manufacturer-shipped bag carrying a single unit of merchandise. When powdered or granular material is bag packed, the closure becomes the all-important point and each of the many closures discussed on this and the preceding pages is especially suited to certain uses.

In considering closed bags of these types, the following may be taken as checking points: 1. Secure closure; 2. recloseability; 3. siftproofness; 4. convenience in stacking; 5. convenience in packing; 6. cost of equipment.

Checking against these points, one type of closure may be indicated in one instance and another logically chosen for a different product and different marketing or manufacturing conditions. Additional checking points, related perhaps more to the bag but dependent in part upon the choice of closure, are: 1. Ability to take and hold a permanent shape; 2. ability to accept printing on all sides of the bag; 3. ability to accept and maintain an attractive design, both for store display and in the consumer's hands.



12. Bagpak cushion stitch closure.

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The BLACK HAND WILL ROB YOU of Sales and Profits



Cupples-Hesse bags are made of

Cellophane
TRADE MARK
THE DUPONT CELLULOSE FILM

No one knows better than the man behind the counter how quickly black dirty hands soil unprotected merchandise.

Cellophane Bags guard the freshness of your product from plant to purchaser. It keeps them sanitary, free from dust and germs, yet its crystal clear visibility insures eye appeal sales.

Cupples Hesse packaging engineers are ready, willing, and able to solve your problems on printed or plain Cellophane bags and wraps.

Cupples Hesse ENVELOPE AND LITHO. CO.

4169 N. KINGSHIGHWAY ~ ~ ~ ~ ST. LOUIS, MO.

OTHER CUPPLES-HESSE PRODUCTS ARE

WAXED GLASSINE BAGS **TAGS** **FOOD CUPS** **ENVELOPES** **LETTER-HEADS**



1



2

1. Tapered edge paper packets for irregular shaped product. Courtesy The American Paper Goods Co. **2.** Multi-color printed packets for seeds, beverage powders and deodorants. Courtesy Baltimore Paper Co.

Merchandise Envelopes and Packets

Envelopes and packets are rightly considered as important packaging materials because: (1) there are many products which can only effectively and economically be packaged in them; and (2) special uses for certain products demand their use, such as the following:

1. Individual portions, such as hot-chocolate powder for soda fountain and restaurant service.
2. Small units—such as small parcels of seeds or certain drug products such as five aspirin tablets.
3. Small quantities of powdery substances which must be completely enclosed to prevent sifting.
4. Flat objects of light weight, such as hosiery, gloves, collars, embroideries, etc.
5. As a suitable container for a sample for general distribution, such as an anti-acid powder.
6. Furnished by a manufacturer, as a means of safeguarding the identity of his product all through the distribution process, to retailers who buy in bulk or large unit packages, and dispense in small units to ultimate consumers.

In general usage the term "packet" applies particularly to envelopes or enclosures which contain flower and vegetable seeds, and are beautifully lithographed in color with true-to-type reproductions. All other flat type containers come under the general classification of *merchandise envelopes*.

In size they vary from the tiny $1\frac{1}{2}$ in. by $1\frac{1}{2}$ in. center seam envelope, used for two or three pills, up to the $6\frac{1}{2}$ in. by $9\frac{1}{2}$ in. or $7\frac{1}{2}$ in. by $10\frac{1}{2}$ in. general utility envelopes, accommodating one or more pairs of hose. There are practically no limitations as to styles of papers used in making them, as to color, finish, weight and texture, as well as whether they are transparent, semi-transparent or completely opaque. They may be had both in open end and open side styles, either with or without flaps, depending on the product to be packaged. And as to surface decoration they are capable of receiving any type of printing or lithography, in any color or combination.

A patented type of packet, known as the Sanitape Sealtite, has been developed by the Ivers-Lee Co. and has been used for a number of years for packaging pharmaceutical products such as vitamin capsules, aspirins, etc., as well as cocoa, coffee, face powder, etc. Paper, cellophane, rubber hydrochloride, metal foil and various other thermoplastic resin coated materials are utilized. The packaging material and the product are placed in an



MODERN Packages

Manufacturers of High Grade Bags

Benj C Betner Co

DEVON PA

automatic machine which produces a complete packaged unit, containing one or more tablets or a measured quantity of granular or powdered material, heat sealed within a segment of cellophane or other sheet.

Another type, likewise patented, is the Sealtite Uni-Wrap which utilizes two opposed films of material, heat sealed completely around tablets, pills, capsules or similarly shaped products. It may be produced in lengths two units wide and up to as many as 14 units long. It is particularly applicable to products extremely sensitive to atmosphere changes such as effervescent and dehydrated compounds.

Both types are nicked for convenience in opening and thus a single dose or portion may be detached without reducing the protection afforded the remaining units.

A similar type of package is likewise available for powders, crystals and granules. The machines for producing these packages are installed in packaging plants when production is large enough to justify such installation. In many instances, it is found preferable to ship the product to the machine maker's contract packing department and then to re-ship either directly to consumers or distributors or back to the original source for packing into sales containers.

Several devices of both semi-automatic and automatic types are available for the production of packets of transparent cellulose or other heat sealing materials for candies, doughnuts and a host of other small items. These machines apply a longitudinal seam to the cellophane sheet, as it comes from the roll, to form a tube and then heat seal both ends of segments any desired length to form a complete sealed package. Various means are used to insert the product prior to the sealing of the second end of the container.

3



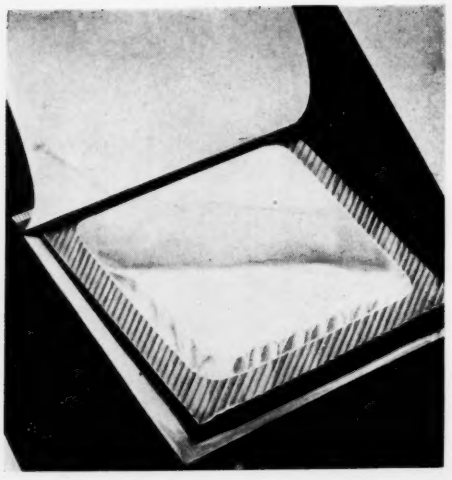
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3. Colorful seed envelopes, some with direct color photographic reproductions. Courtesy Stecher-Traung Lithograph Corp. **4.** Vari-shaped packets for a variety of products. Courtesy The American Paper Goods Co. **5.** Printed glassine envelopes. Courtesy The American Paper Goods Co. **6.** Sanitape Sealtite unit powder package holding a portion of powder between two films of transparent material, heat sealed around all edges to form a sift-proof unit container. Photo courtesy Ivers-Lee Co.

Unit-Wrapping

SEALTITE-SANITAPE

Standard for Fine Pharmaceuticals



GLIMPSES OF OUR UNIQUE PACKAGING SERVICE



A VALUABLE BOOKLET

This booklet shows graphically and in detail many of the packages of important manufacturers, and clearly indicates the outstanding advantages of this outstanding wrapping—We shall be glad to send you a copy.

PRODUCTS WHICH ARE UNIT-WRAPPED HAVE

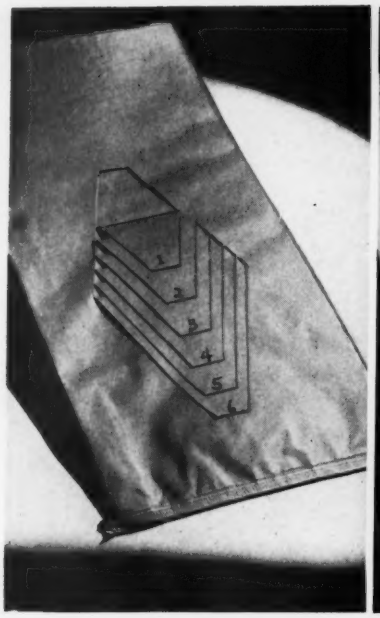
important competitive advantages right from the start—Economical Packaging and Shipping — Complete Protection — Maintained Efficacy — Convenience — Customer Appeal. The adaptations of Sealtite-Sanitape wrapping are endless both in package variation and materials used—This truly modern packaging warrants your careful consideration. We shall be glad to give you complete details.

SEALTITE-SANITAPE is a method for wrapping oval pills and capsules as well as tablets in air-tight, moisture-proof pockets—formed by welding two sheets of specially prepared moisture-proof paper, cellulose, foil or Pliofilm around each individual unit.

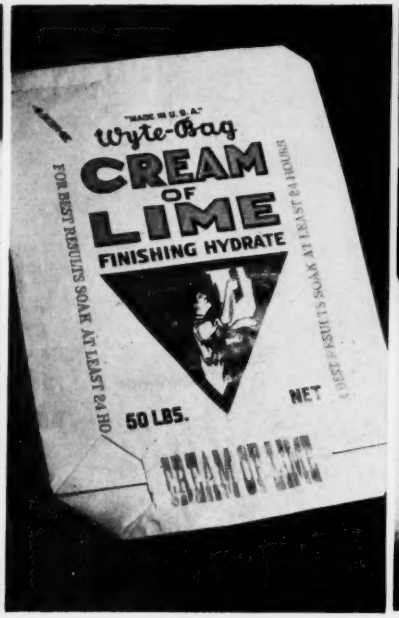
THE UNIQUE PHARMACEUTICAL PACKAGING SERVICE WHICH IS

IVERS-LEE COMPANY

215 CENTRAL AVENUE, NEWARK, N. J.



1. Six-ply multiwall bag.



2. Pasted valve bag.



3. Sewn valve bag.

Heavy Duty Multiwall Paper Bags

by W. EDWARD SCOTT*

The wide use of multiwall paper bags by United States industry as bulk shipping containers has reached a point where over five hundred million of them are used annually. Their great utility is evident when it is realized that materials ranging in value from a few cents per pound up to eighty cents per pound are shipped in 100 lb. paper bags daily over the common carriers. These materials range from comparatively inexpensive crushed and pulverized rock products to fine, delicate foodstuffs and chemicals which need the utmost in packaging protection in order to reach the consumer in a clean, stabilized condition.

Shipping Weights

The principal shipping weight in these bags is 100 lbs. of commodity, although many shippers are finding this type of container to be ideally suited from both the economic as well as the utilitarian standpoint for units ranging in weight from as low as 20 lbs. up to 140 lbs.

Construction

Heavy duty multiwall paper bags are constructed of from three to six walls of kraft paper, depending upon the weight, density and physical characteristics of the product they are intended to carry. Each ply or wall of paper is properly arranged and fabricated in tubular form, one within the other, so that each bears its share of the burden. Greater flexibility and strength are obtained by using a multiple number of walls in relatively light basis weights rather than a number of walls of heavier paper. For this reason, the average heavy duty multiwall paper bag is constructed of a number of sheets ranging in basis weight from 40 to 70 lbs. each—the most frequently used paper being sheets in the 40 and 50 lb. basis weights.

Moisture Protection

This is a major consideration when developing a bag for certain products. Kraft bag paper is in itself resistant to water and moisture to a considerable extent. These bags will shed water as contrasted with the absorbent action of the textile container. Therefore, the contents are safe if not exposed too long. Atmospheric moisture-vapor is another matter, however, as it will penetrate the tightest sheet of untreated paper. To guard against this, one or more walls of a number of different moisture-resistant sheets are incorporated in the bag construction, resulting in a highly moisture-resistant container.

* Bagpak, Inc.

XUM



★ ★ ★ ★ ★

If it's a Paper Bag UNION makes it

★

Whether your particular product calls for a tiny cellophane package, an attractive shelf package, or a heavy-duty bulk package, Union has the manufacturing facilities to furnish it. What is more important, Union offers you the assistance of seventy years of experience in the successful solution of packaging problems. A staff of competent artists will help you develop a package design that will catch the buyer's eye and ring the cash register.

At your request, we shall study your particular packaging problem and offer our recommendations. No obligation, of course.

TRADE MARK UNION

Union Bag & Paper Corp.

WOOLWORTH BUILDING, NEW YORK

Paper Mills at. SAVANNAH, GA. HUDSON FALLS, N Y
Bag Factories at. HUDSON FALLS, N. Y. CHICAGO, ILL.
LOS ANGELES, CAL. SAVANNAH, GA.



Types of Multiwall Bags

There are two types of these containers in general use. These are the valve bag and the open mouth bag. The valve bag is factory-closed. That is, it has been closed at both top and bottom at the point of manufacture. The closure is made by either pasting or sewing. A small triangular opening called the "valve" is left open at an upper corner and the bag is filled in the shipper's plant by means of special packing machines which force the material into the bag under pressure. When filled, the internal pressure of the commodity forces a flap of the bag material across the opening, thereby effecting closure, and the bag is ready for shipment. This is a fine container for certain pulverized chemicals and foods.

The open mouth bag is factory-closed at the bottom only, and, like the valve bag, the closure is made by either pasting or sewing. The top of the bag is left open, ready to receive its contents at the filling station in the shipper's plant. Closure is generally effected by sewing, using machines especially designed for sewing paper bags, or in the case of less expensive commodities, where sifting is not a factor, by manually tying the tops with either wire or twine. By reason of its large open mouth, which permits easy filling, this type of bag has very wide use as a bulk shipping container for hundreds of commodities of practically all types and physical characteristics, ranging from those mentioned in the preceding paragraph to coarse and even non-freeflowing materials.

Recent New Uses

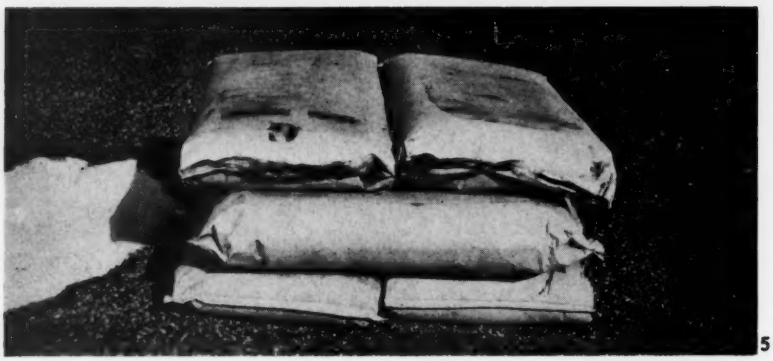
The heavy duty multiwall paper bag is used principally as a bulk shipping container for those commodities that are dry, powdered or granular in character and which can be mechanically flowed or spout-poured into the container. However, a new use for these bags was developed that bids fair to expand enormously their field of usefulness. This new use is the packing of materials having post-hardening characteristics, such as rosin and asphalt, which are poured into the bag in a liquid state at astonishingly high temperatures, without damage to the bag. When cooling and subsequent hardening takes place, the bag, in effect, is a tightly wrapped package.

Packing Practice

The use of new and improved packaging machinery has played no small part in the rapid development of these containers. Valve bags are packed on special types of automatic packers. Open mouth bags are packed on machines which automatically weigh, fill, close and seal the material into the bags. There are also several machines that will perform any part of this packaging cycle. For instance, if the shipper already has weighing and filling equipment which he wishes to continue to use, then there is a packer available to complete the cycle that will automatically close and seal the bags. This wide choice of equipment and different combinations of it now make the heavy duty multiwall paper bag equally available to the small as well as the large shipper.



4



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4–5. A test of the weather resisting qualities of multiwall paper bags over a half-year period. Illustration 4, taken early in October at the start of the test, shows six multiwall bags filled with rosin set in exposed position on a slag roof. Illustration 5 shows the same bags photographed six months later. Note snow still remaining on ground. At intervals during the test period the bags were subjected to heavy rain and melting snow.

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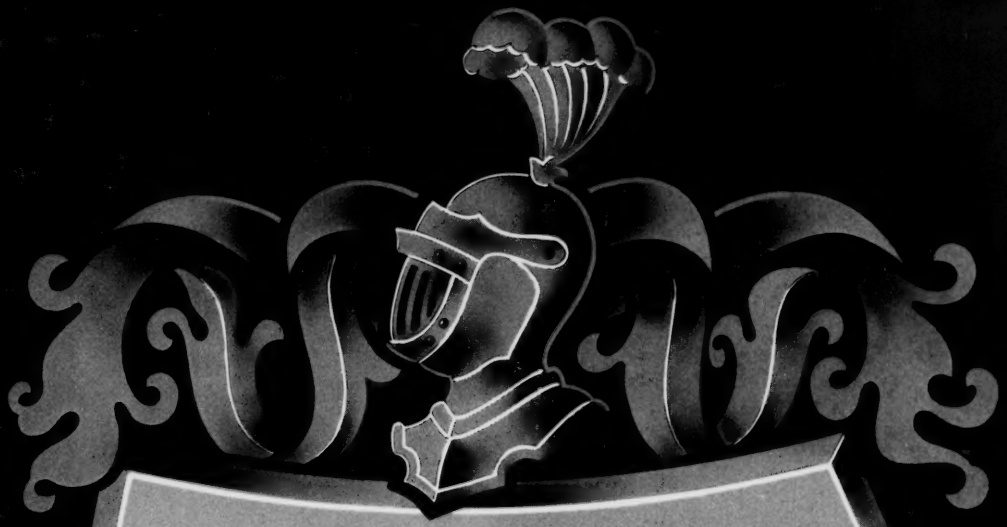
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SHELLMAR



The
TOP NAME
in
TRANSPARENT
PACKAGING
and
LAMINATING

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• Creative effort in package designing can be completely successful only when deliberate thought has removed every possible limitation of size, color and form.

• Shellmar package creations achieve their utmost success because, from their conception until they assume final form, Shellmar artists, designers and engineers work within the widest possible range of sizes, color combinations and package forms.

• To translate such creations from ideas to actualities, Shellmar has built and equipped the most modern plant in America devoted exclusively to the conversion of transparent film. Whether a design is to be

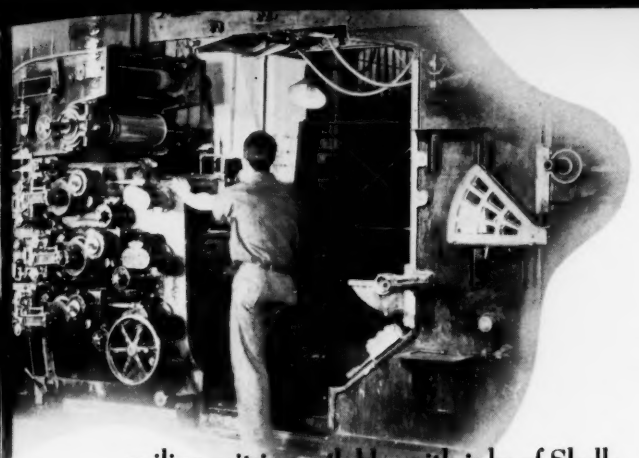


reproduced in one color or in seven, specially-designed Shellmar presses can handle it. Whichever printing process will produce the best result — gravure, letterpress or

SHELLMAR

NEW YORK

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aniline—it is available, with inks of Shellmar's own make to insure depth, brilliance and permanence of color.

• Etchings and printing plates are produced in Shellmar's plant, to permit close control of workmanship. Air-conditioning is extensively used, to help improve an already fine product. Chemical and physical laboratories provide constant control of ingredient qualities, maintain standards of excellence in adhesives, colors and materials.

• Research to improve present products, and to develop new ones, is continually carried forward. Safety devices, illumination, operating conveniences of all kinds are kept at top pitch, all to increase efficiency and improve quality.

• From such deliberate effort to create the finest available packages employing transparent film springs Shellmar's claim to the title of "The Top Name In Transparent Packaging."

• Among the Shellmar package forms in the following list is one that may be perfectly fitted for your product:

"CELLOPHANE" SHEETS, printed in from one to seven colors.

"CELLOPHANE" ROLLS, also available in combinations of from one to seven colors.

"CELLOPHANE" BAGS, flat, square or satchel bottom; printed or unprinted; stock or special sizes.

"CELLOPHANE" ENVELOPES, unprinted, or printed in from one to seven colors.

SHELL-PAX, a transparent-face, rigid-back, tailor-made container.

TRAY-PAX, transparency plus printed beauty, plus rigid-back stability.

SHELL-VUE, gummed window-transparencies in multi-color.

SHELL-PLI, Shellmar's own lamination of printed cellulose to base stocks, for cartons, display containers, catalog and brochure covers, etc.

SHELL-GLO, clear cellulose laminated to printed base stock for cartons, book and catalog covers, posters, calendars, etc. (This insert is a specimen of Shell-Glo.)



R PRODUCTS COMPANY

MT. VERNON, OHIO CHICAGO

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SHELLMAR

It is natural that "top name" users of Converted "Cellophane" should gravitate to the "top-name" supplier.

A "Who's Who" of American Industry could easily be compiled from SHELLMAR'S customer list.

The same painstaking service, the same top-grade workmanship and the same merchandising counsel are available to all industries, large or small.

Simply outline your packaging problem to

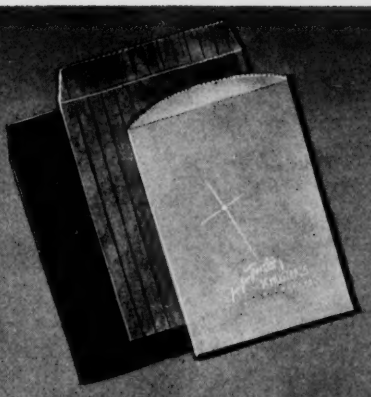
SHELLMAR PRODUCTS COMPANY
Sales Development Division
MT. VERNON, OHIO

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Notion and Millinery Bags, for retail needs —Take-with and send.





Cellophane and Glassine Bags for retailing foods, candies, bakery items.

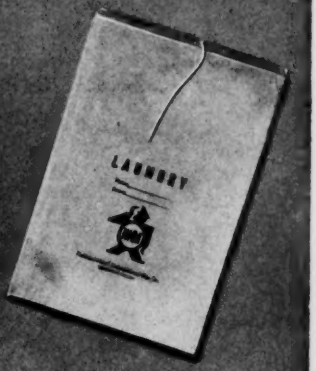


Bottle Bags for multi-unit sales of bottle goods. Also shopping bags.

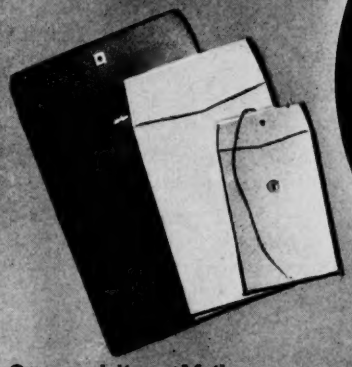
Sofas, Sodas, Stockings
Laundry, Lime, Licorice
Coffee, Chemicals, Catalogs

EQUITABLE MAKES PRACTICALLY EVERY TYPE OF PAPER BAG USED

Machine or Hand-made



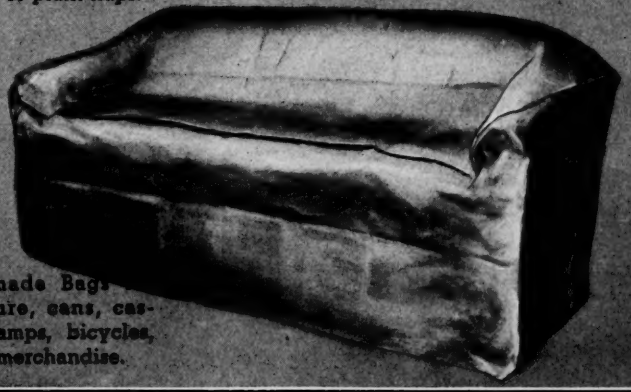
Laundry Bags for hotels, railroads, etc. Also garment delivery bags.



Open-end die-cut Mailing Envelopes with clasp, button-and-string, or plain flaps.

Multi-wall, heavy-duty Sacks. For packing foods, chemicals, coal. All sacks specially designed for each particular use.





Handmade Bags—furniture, cans, caskets, lamps, bicycles, bulky merchandise.

CONSULT EQUITABLE RESEARCH DIVISION ON ANY PACKAGING PROBLEM

EQUITABLE *Paper Bag* COMPANY, INC.

47-00 31st PLACE, LONG ISLAND CITY, N. Y. • PAPER MILLS: ORANGE, TEXAS

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Cotton and Burlap Bags

Textile bags, as the name implies, are made from woven fabrics of various kinds. There are four important types in common use.

1. **Cotton bags:** Many different styles of goods are used in making cotton bags, special constructions being designed to serve particular or unusual purposes.

Open-mesh cotton bags are widely used for shipping cabbages, onions, potatoes, oranges and many other vegetables and fruits. They provide an extremely compact form of shipment and permit full utilization of valuable space in refrigerator cars and storage warehouses. They permit examination of the product and provide for air circulation—a feature definitely desired in the case of certain fruit and vegetable items.

2. **Burlap bags:** Jute, from which burlap bags are made, is a product of India. Burlap goods are made in India for the most part, although limited quantities of European-made goods are available. Many different widths and weights of goods are used in making bags. The common widths of burlap run from 32 in. to 45 in., and the common weights from 7 oz. to 12 oz. Besides this, there are many special constructions designed for particular purposes. Burlap, being imported from India, necessitates an anticipation of supplies at least six months in advance. Burlap bags, because of their strength and low cost, are widely used for bulk products.



1. Open mesh fabric bags for fruits and vegetables.



2. Laminated (textile with paper linings) bags for powdered products.

A new form of textile tubing, designed as a protective wrap for rectangular and cylindrical shipments, has recently been developed. The tubing is made of burlap and designed to replace burlap piece goods as a wrapping. Hand sewing, such as required when ordinary burlap piece goods are used, is entirely eliminated, the tubing being fitted over the top of the package, fastened at the bottom with a wire tie, pulled up on the sides to take up the slack, fastened with a wire tie at the top and then cut from the roll just above the upper wire tie.

3. **Laminated bags:** These bags are made from either cotton or burlap goods and have a paper lining which is attached to the cloth by an adhesive. Any of the various constructions of goods used in making cotton and burlap bags may be employed in making laminated bags. The bags may have one or more plies of paper lining. The lining is attached by special adhesives. These adhesives may be of such characteristics as to make the bag waterproof or to give it some other quality which may be required. Laminated bags are used extensively as shipping containers for chemicals and food products.

4. **Paper-fabric bags:** These bags are a comparatively new development. They are made from strips of tough paper, spun into yarn, and woven into open-mesh cloth. Many brilliant colors of goods are available. Paper-fabric bags are used principally as containers for fresh fruits and vegetables.

Textile bags have certain characteristics which make them economical and practical containers.

Textile bags are light. They are thus easy to handle and labor costs and freight charges are correspondingly low. The tare weight of textile bags is frequently 80 per cent less than that of wooden containers. Freight savings may be 8 or 9 per cent more when bags are used.

Textile bags require little storage space. 500 bags, in a bale, occupy the space of one barrel.

Textile bags can be printed. Attractive multicolor brands can be printed on bags as well as formulas, instructions, and other information which may be necessary, thus stenciling and labeling with the involved labor cost, is eliminated.

Textile bags have good salvage value. The receiver of products packed in bags, either has uses for the empty bags himself, or if not, he can sell them at a good price as there is a steady demand for used bags.

Textile bags have two principal uses:

1. As shipping containers for bulk products. Food, agricultural, and industrial products, particularly those of a powdered or granular nature such as flour, salt, grain, seeds, feeds, fertilizers, cement, chemicals, are packed for shipment in bags.

2. As consumer packages. During recent years their use as packages intended for the consumer of multi-unit items, has been widely extended.

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METAL CONTAINERS

SECTION FIVE

Pages 173 to 198

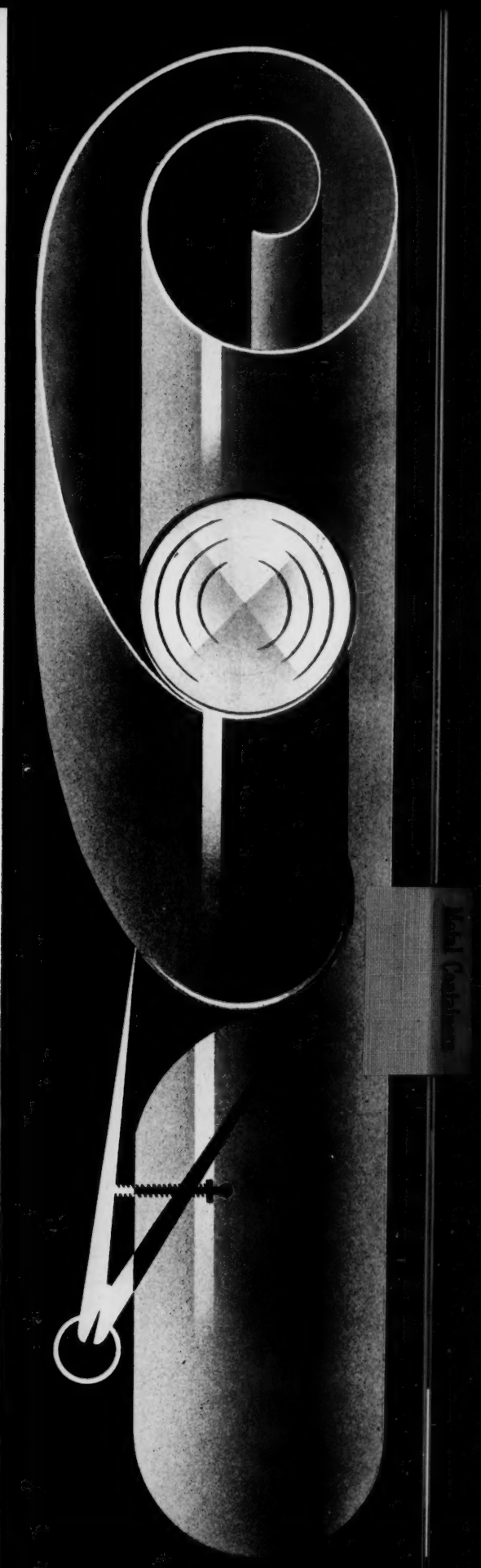
TIN PACKAGES AND CANS

SPECIALTY METAL CONTAINERS

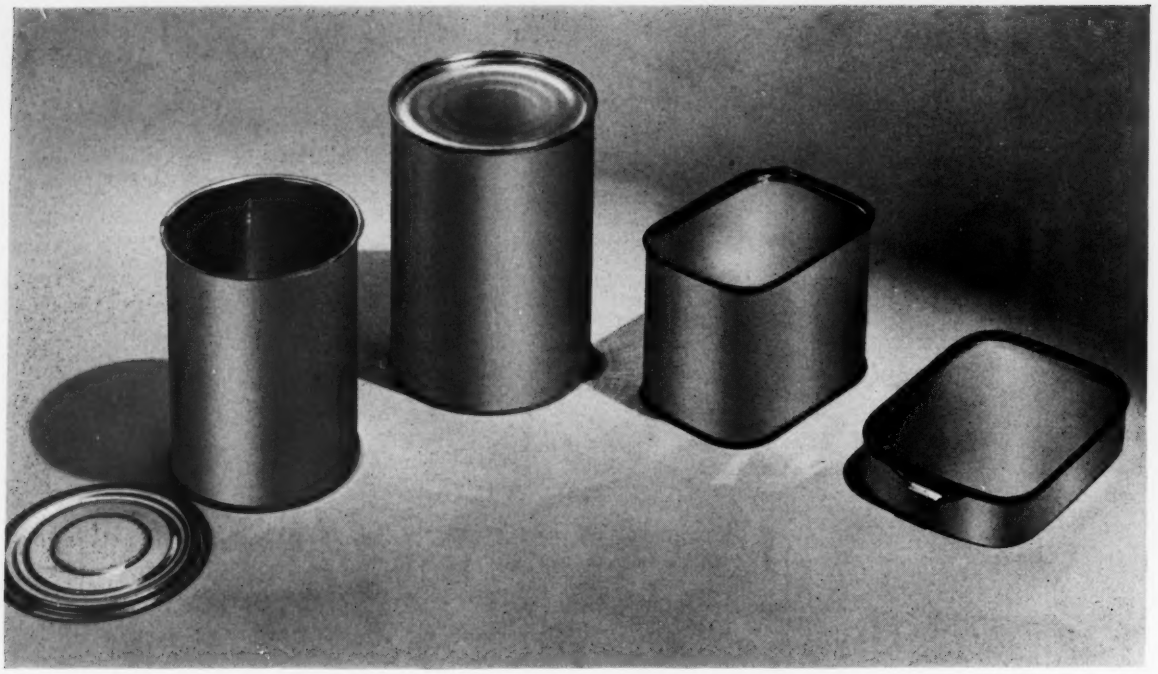
COLLAPSIBLE METAL TUBES

ALUMINUM CONTAINERS AND VIALS

FIBRE-BODIED CONTAINERS



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1. Processed food cans. At extreme left, standard round can as supplied to the processer. At center, round can with top seamed on, ready for labeling. Right, rectangular can as used for asparagus and flat rectangular key opening can as used for sardines, etc.

Tin Packages and Cans

by PHILIP L. FERRIS*

The packages of today are manufactured from numerous materials. One of these is tin plate, and the purpose of this article is to tell you how to go about selecting a container of this type for your product.

Let us first discuss this material that is referred to as "tin plate." Tin containers, or tin cans, as they are more popularly called, are not manufactured primarily from tin. This would not be practical since pure tin is very expensive and too soft to make a sturdy package of the type you would want. Tin cans are made from a sheet of steel coated with a very thin film of tin which is applied to both sides of the steel sheet. The tin coating is necessary because the steel alone would rust, not only from the moisture in the air, but also possibly from a chemical reaction set up by the contents of the container. Steel alone, coated with a lacquer, of which there are numerous types, would frequently prevent oxidation, but difficulties would arise in soldering the side seams of the cans at practical can making speeds. The natural tin coating also gives the container a very clean and shiny appearance.

It is practical, in certain instances, to make containers from black plate or terne plate. Black plate is the sheet of steel without the tin coating and it may be used effectively, when coated with lacquer or lithographed, for dry product containers where soldering of the side seam is not necessary and where oxidation is not an important factor. Terne plate, which consists of the same steel base, coated with a tin-lead alloy, may be used for the packing of many non-food products.

Tin plate, black plate and terne plate can be obtained in various thicknesses or weights, as they are commonly referred to in the canning industry. Also you may use a material called "charcoal plate." Sheets with the customary light coating of tin are known as "coke plate," but if a heavier coating of tin is applied the sheets are known as "charcoal plate" and may be used when an exceptionally bright finish is required or when the container is to be subjected to heavy oxidation.

Product Determines Can Type

Now that we understand the material from which we will make our container—what is the nature of your

* Sales Research Dept., Continental Can Co., Inc.

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product? Is it a processed food, a non-processed liquid, something dry, requiring complete protection from the air or not? Is it a specialty, or is it beer or oil? Can companies are equipped to furnish you with containers of all these types. Or will you require a completely new package? For purposes of simplicity, it might be well to take these problems up in turn.

Suppose you wish to package a processed food. There are certain problems that need to be discussed and carefully approached, but the chances are that we can take care of them. For your information, the cans suitable for holding processed foods are termed, in the industry, as packers or sanitary cans. Many different kinds of foods are put up in these containers. They include meats, vegetables, fruits, soups, fish and various specialties. If your product is something that has been packed before, there will be little difficulty in recommending a satisfactory container. If, on the other hand, it is new to the industry, it will probably be necessary for the research department of the particular company you select to carry out tests to determine whether a lacquer coating will be necessary, or whether plain tin plate will be satisfactory. In either case, research departments are available to you.

The cans used for holding processed foods are generally cylindrical in shape, ranging in diameter from $2^1/_8$ in. to $8^3/_{16}$ in. and in heights from $1^1/_8$ in. to $8^3/_4$ in. It is quite possible for you to use an oblong, square, oval, or irregular shaped can, if you so desire, but the form of the product and consumer convenience should be the deciding factors. Familiar shapes, other than the cylindrical, are the tall oblong cans used for packaging asparagus, the short oblong types for sardines and the irregularly shaped cans in which various packers put up whole chickens, hams and plum puddings.

Manufacturing Operations

There are a great many variations in the methods of fabricating tin cans, ranging from an entirely hand-made can to an entirely mechanically-produced can.

So that any unfamiliar reader may have an understanding of can-making, there follows a brief description of the most modern method of producing sanitary cans.

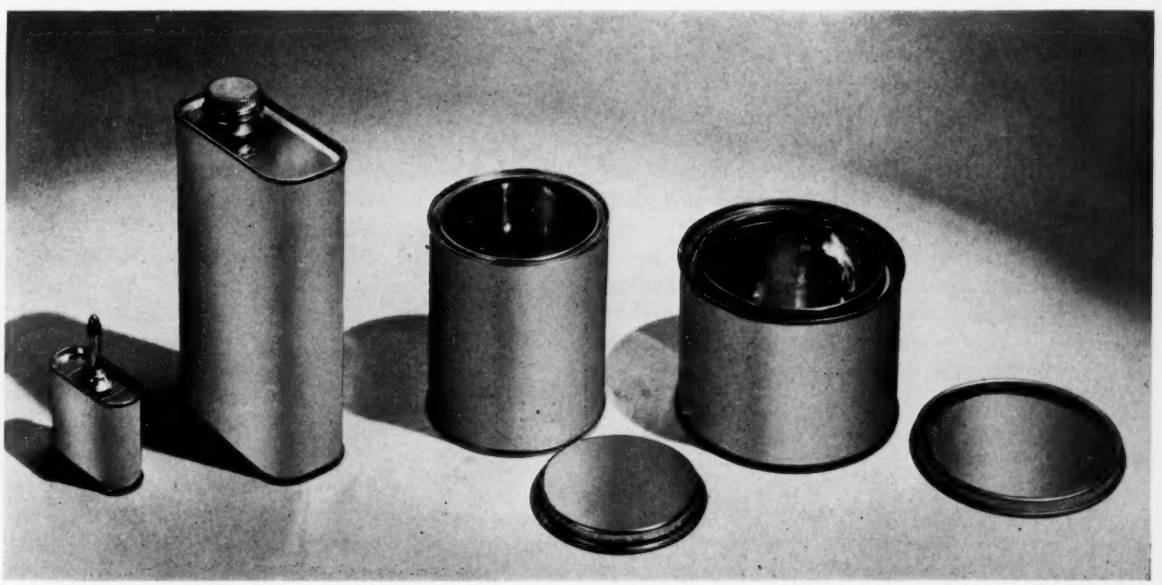
The description of the operations follows in the sequence which occurs in actual manufacture:

1. Slitter—Cuts tin plate to size for the can body with revolving knives.
2. Body-Maker—Forms the flat body blank into a cylinder and shapes, closes, bumps and solders the side seam on the outside.
3. Flanger—Flanges or expands the top and bottom of the can body previous to rolling of end seam.
4. Double Seamer—Attaches one end to the body with a rolled seam.
5. Tester—Tests the cans for leaks by air pressure or a vacuum.

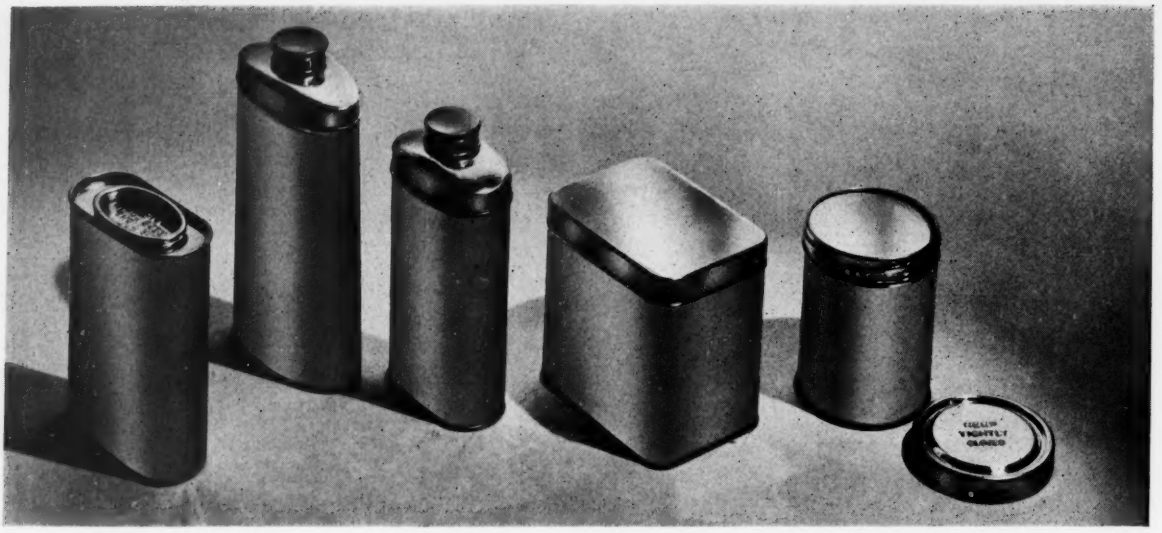
Four separate operations make the ends:

1. Slitter or Scroll Shears—Cuts the tin into strips either straight or with scrolled edge to reduce waste.
2. Press—Blanks out and forms the can end.
3. Curler—Curls or bends the edge of the end to assist in seaming to the can body.

2. Non-processed-liquids containers. From left to right: oil can with extension spout closure, can with screw cap, can with single friction plug, can with triple friction plug.



XUM



3. Dry product containers showing various types of closures that may be utilized.

4. Compound Applier and Drier—Applies a ring of liquid gum around the edge of the can end to insure an air-tight seam.

The packing of processed foods is a highly technical problem, requiring experimentation and study to bring to the consumer a wholesome product which is equal to the fresh vegetable or the tree ripened fruit, as the case may be. It has meant years of work by the can companies to develop each detail of can construction and each lacquer and enamel which would suit the purpose. For your information, the packing of a processed food in a tin can requires hermetic sealing to prevent contamination and a heat treatment sufficiently high to kill all bacteria. Your product, packed under these conditions, will bring it to the consumer full flavored and as nearly as possible comparable to tree ripened fruit or plant ripened vegetables which have been picked at the absolute peak of ripeness.

In commercial canning, vitamins A and B are only slightly affected by heat. Vitamin C, which is destroyed by heat applied in the presence of free air, is retained in canned food products since the processing is done *after* the food is sealed in the can.

Our problem is of a somewhat different nature if you wish to package a non-processed liquid. Certain features of the sanitary can are retained since we must solder the side seam and compound line the ends, but here we do not have to process the contents. It is necessary, however, to select a suitable closure or pouring spout.

There is a large variety of cans available for non-processed liquids. These vary in size from the oval, 1-oz. can designed for special lubricating oils, to the square 5-gal. can which is used for a large number of different products. Containers for these liquids can be made with round, oval, oblong, or square bases and can be made in almost any practical height. They are designed to hold such products as oil, paint, varnish, syrups and insecticides.

Can Dimension Variation

It is well to point out to you here that in your selection of a package you should realize that the base dimensions of tin containers are not variable, but that the heights can be changed to almost any suitable dimension. Can companies have equipment, however, to make almost any practical base size and as soon as you have selected the base you desire, the height of the can can readily be determined.

Containers for non-processed liquids, as well as those for dry products, which we will take up next, are known as "general line" cans. This group includes all the cans that are not designed to hold processed foods.

Our dry product containers generally do not require a soldered side seam and compound lined ends. Like the containers for liquids, they can be had in many shapes and sizes and, if your product is to be packed in such a package, it is unlikely that you will have difficulty in selecting what you require from a can company show case. This type of tin container is designed to hold such products as tea, coffee, spices, crackers, talcum powder and drugs. For some products, such as shoe polish and pills, where a shallow container is desired the body and bottom of the container can be formed from a single piece of tin plate. Where this is done, the package is referred to as a seamless can.

There is one other can belonging to the general line group that you should know about. This is the key-opening vacuum can used by various packers of coffee and other dry products. The can is made with soldered side seam and compound lined ends and is designed to hold a high vacuum pressure, since any air left in the container after filling would result in the deterioration of its contents.

After you have selected the shape and size of your general line container, be it either for a wet or a dry product, you must decide on a closure which will not only keep the contents in the can, but which will also allow

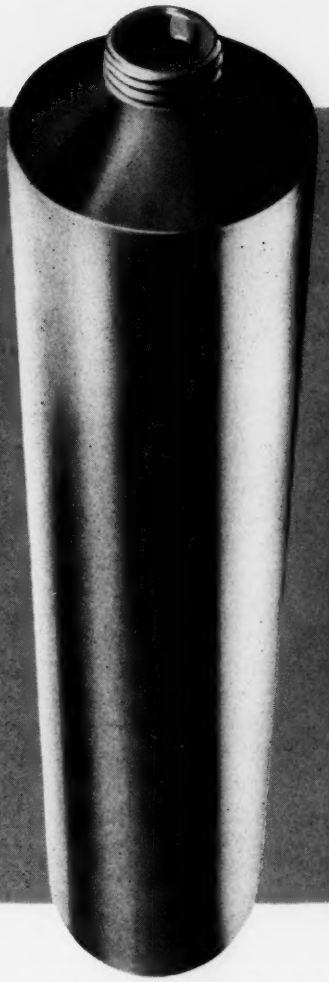
XUM

YOU MAY SAVE MONEY ON TUBES IF YOUR PRODUCT IS LISTED

HERE

PLAIN Alcoa Aluminum Tubes May be used for These Types of Products

Brushless Shave Creams
Neutral Cleansing Creams
Nourishing Tissue Creams
Deodorizing Creams
Liquefying Facial Creams
Vanishing Facial Creams
Make-up Remover Creams
Vitamin Skin Creams
Nail Polish Remover
Vitamin Ointments
Permanent Wave Creams
Lubricating Jellies
Wax Type Depilatories
Neutral Tooth Pastes
Rouge Paste
Facial Paint Paste
Neutral Pharmaceutical Balms
Petroleum Base Ointments
Neutral Sunburn Balms
Eye Preparations
Lubricating Grease
Paint Paste Concentrate
Lacquer Cements



HERE

Coated Alcoa Aluminum Tubes May be used for These Types of Products

Brush-type Shave Creams
Tooth Pastes, Acid or Alkaline
Astringent Creams
Antiseptic Ointments
Pharmaceutical Ointments, Acid or Alkaline
Mercurial Ointments
Contraceptives
Facial Mud Masks
Mechanics Soft Hand Soap
Cold Creams (Facial)
Mascara
Vitamin Skin Creams
Venereal Ointments
Shampoo Creams
Shoe Polishing Creams
Glues
Detergent Paint Cleaners
Prepared Cheese Spreads
Prepared Butter Spreads
Prepared Fish Spreads

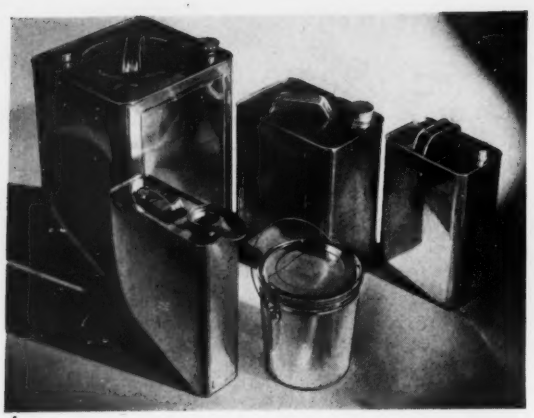
You no longer need to pass up the economy and other advantages offered by Alcoa Aluminum Tubes. Products for which plain Aluminum Tubes are unsuitable can now be packed in tubes having a non-metallic interior coating that makes them inert to acids and alkalines. The coatings have no effect on the product nor does the product affect the coatings.

In the light of this development, it is time to re-examine the whole question of collapsible tubes. Study your tube costs over a period of years, as well as current prices. Compare these figures with the cost of Alcoa Aluminum Tubes. Write for quotations and see how you can save money. ALUMINUM COMPANY OF AMERICA, 2150 Gulf Bldg., Pittsburgh, Pa.

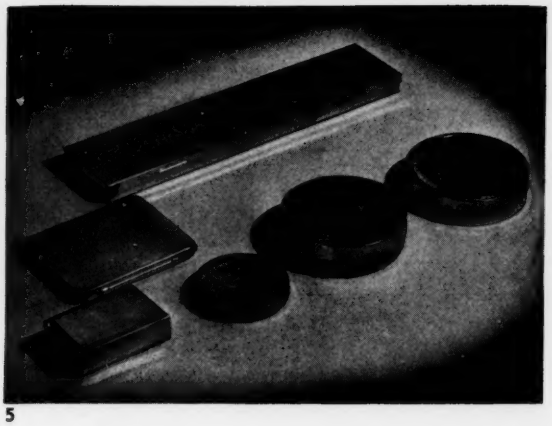
ALCOA
Reg. U. S. Pat. Off.

PACK *Safely* IN PURE

ALCOA ALUMINUM TUBES



4



5

4. Large liquid containers equipped with sheet metal handles, wire handles, pouring spouts, etc. **5.** Seamless boxes and cans.

the ultimate consumer to dispense it with the least possible difficulty.

Can Closures

There are a great many types of closures for both dry and liquid containers, all of which have been devised for the convenience of the consumer.

Liquid containers are generally equipped with either screw-caps, pouring spouts, or one of the three types of friction plugs. The screw-caps and pouring spouts can be obtained in numerous different sizes, their selection depending on the product and the type of flow desired by the consumer. The friction plug closures are round and are designated as "single friction," "doubletite," and "tripletite." As their names imply, they furnish a single, double and triple friction contact between the plug and ring affixed to the top of the can body. These three closures come in different sizes and little difficulty should be encountered in selecting a suitable size for your product.

Dry packages, like those for liquids, have many different closures and fittings. Again careful thought must be given to the consumer's convenience and the nature of the product. The closures most used are the slipon, hinged, slide and screw covers, as well as the dredges common to powdered products, and the single friction plug. Talcum powder and tooth powder cans usually are furnished with caps which slip over a perforated neck. Here the powder may be either sifted or poured, depending on the size and number of openings in the neck. Screw covers are also obtainable, as well as a closure known as the lock top, combining interrupted threads and dimples at the top of a round can body and around the skirt of the cover. A supplement to the lock top, which can be used, if required, is a paper seal curled into the top edge of the can body. This renders the contents tamper-proof and furnishes added protection from dust and dirt.

6



6. Beer cans. Left to right: flat top, cap sealed quart, cap sealed 12 oz. and newly developed seamless cap sealed.

XUM



Specialists in
SMALL AND MEDIUM-SIZE LITHOGRAPHED CANS

Just as children have different needs from adults *small lithographed metal containers present special problems* in design and manufacture . . . problems ordinary can makers are not equipped to solve in the best, most economical way.

Burdick is dominant in this specialized field. Nothing could better attest our skill than the fact that hundreds of users of *large* packages come to us for their smaller sizes and sample sizes! And users of small cans exclusively find us their ideal source of supply.

They come to us because our entire staff . . . our machine set-up . . . our plant layout . . . our designing knowledge . . . our way of thinking . . . are all devoted to the better production of better small and medium-size containers.

Our specialized equipment means deep economies and our designing skill with small space will bring you powerful sales appeal. Major executives of the company will give you personalized service!

Write us for samples, ideas and quotations.

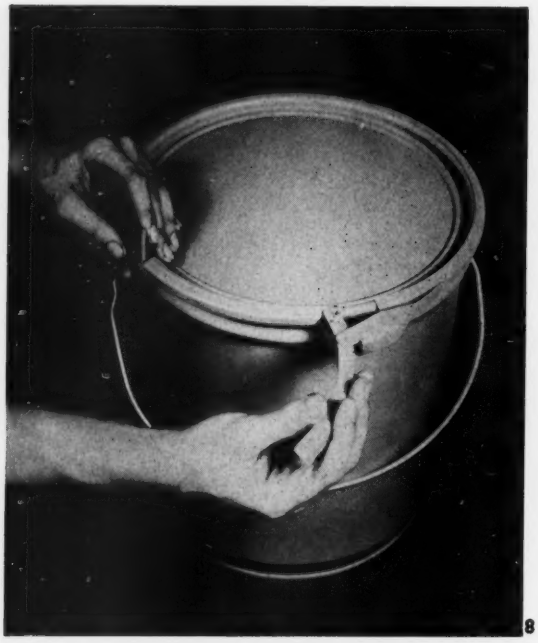
BURDICK & SON, Inc.

ALBANY NEW YORK





7



8

7. Key opening vacuum can as used for coffee, malted milk, honey, etc. **8.** Metal pail equipped with a new type of tight sealing lever closure.

If you are a brewer or an oil refiner, you will consider tin containers for your product. The can for beer is now used by almost every well known brewer in the country and its advantages are at once apparent. The cans are light in weight, easily carried, take little space, are conveniently stacked and exclude light from their contents.

Three types of beer cans are available. One has a flat top, double seamed on by the brewer after filling and is opened by a special opener. Another is cap sealed and opens like a bottle. The third is similar to the cap sealed can, excluding the fact that its body is seamless.

The 1-qt. and 5-qt. containers for motor oil should need little introduction. Refinery sealed cans are tamperproof and have made it impossible to substitute an inferior grade of oil or to give short measure.

Tin Can Design

The question of design for your package is an important one. Display value must never be overlooked, since an attractive package which stands out on the retailer's shelf and catches the consumer's eye will increase sales and pay you for the effort you have put into the dress of that container.

There are two fundamental ways to decorate a tin container. One is to apply a paper label over the plain tin; the other is to have the can lithographed. If your package is a sanitary can, the chances are that you will paper label it, but if it belongs to the general line group, it will probably be lithographed.

Tin cans may be lithographed in any number of colors and designs. Lithography is generally applied over a single base color or lacquer. This work is always done on the flat sheet of tin plate, which is then cut up into individual can bodies or covers, as the case may be.

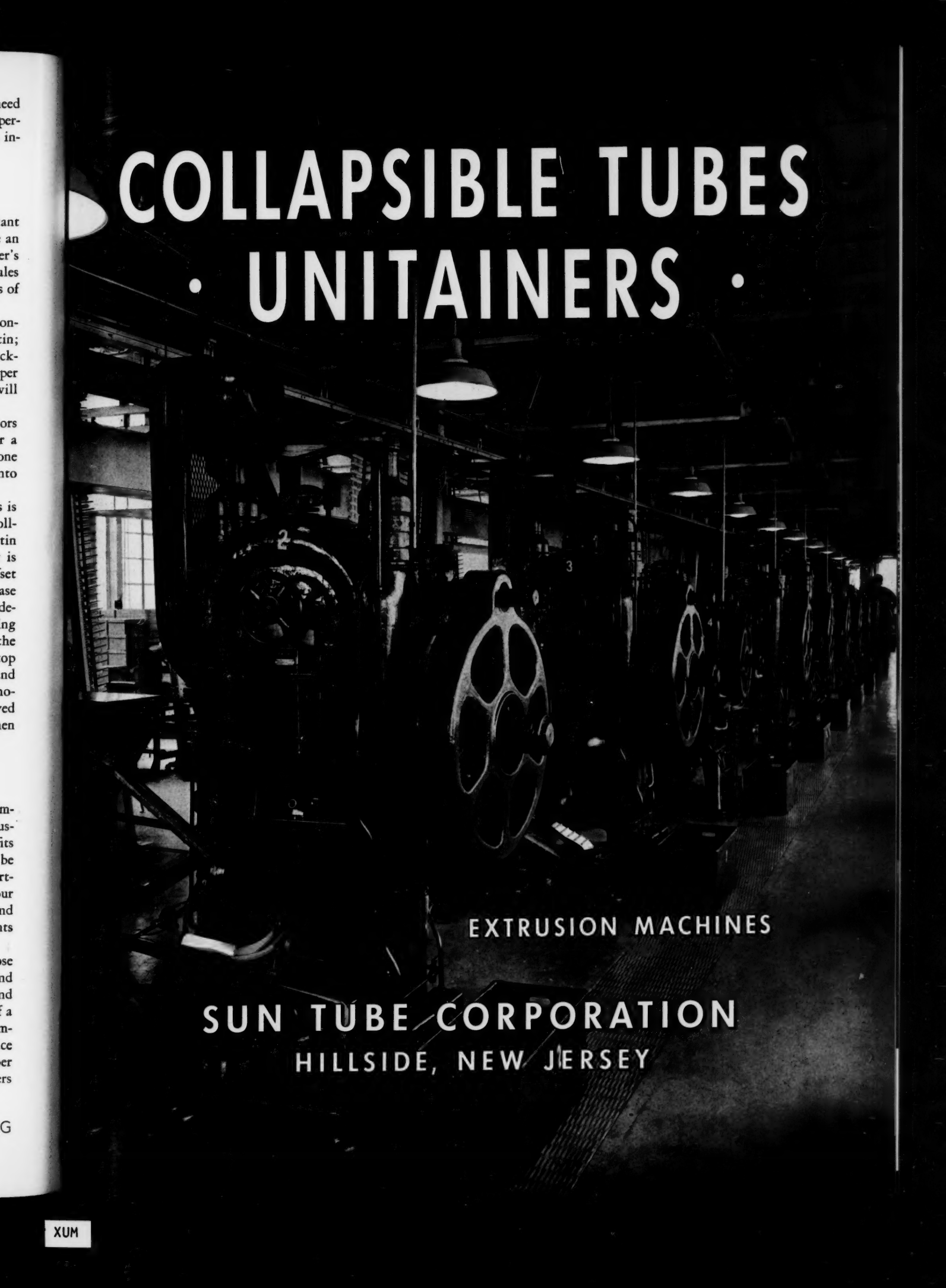
It is relatively easy to apply a base coat, since this is done by means of comparatively simply constructed rollers. Lithography, or the printing of various inks on tin plate, is, however, a more complicated process. It is effected on printing presses by means of the rotary offset method. Lithography is based on the fact that grease is attracted by grease and is repelled by water. The design on a roughened zinc plate is greasy and, by keeping the rest of the plate covered with a water film, only the design is permitted to take up new ink, fed from the top of the press, and to transfer it to a rubber blanket and thence to the tin plate. After sheets have been lithographed or coated, they are automatically conveyed through baking ovens. In most cases, a varnish is then applied to the finished sheet.

Supplier Services

It now remains to tell you about the services can companies give their customers and their prospective customers. Design, research and closing machine benefits extend to every industry whose product is, or might be packed in cans. Can companies maintain art departments to help you work up attractive designs for your packages, new merchandising plans are conceived and your package is made to sell. Development departments help you devise new containers.

Can companies also have research departments, whose work it is to investigate every phase of your product and recommend proper methods of processing products and lining cans so that the ultimate consumer is assured of a pure and wholesome product. And, also, the can companies maintain groups of men whose duty it is to service and keep in perfect condition at all times the vast number of closing machines and other equipment used by packers throughout the country.

XUM


COLLAPSIBLE TUBES
· UNITAINERS ·
EXTRUSION MACHINES
SUN TUBE CORPORATION
HILLSIDE, NEW JERSEY

Specialty Metal Containers

Among the items included under the general head of specialty metal containers are the following: triple compacts, double loosepacts, single compacts, rouge boxes, eyeshadow boxes, mascara boxes, lip-rouge boxes, many sizes and styles of ordinary slide-elevator lipsticks, swivel lipsticks, perfume dispensers, and containers for packaged face powder. All of these items are finished in various ways such as combination of enamel and metal finishes, as polished nickel, chrome and brass; brushed nickel, chrome and brass, all having varying designs dependent entirely upon the customer's requirements and specifications.

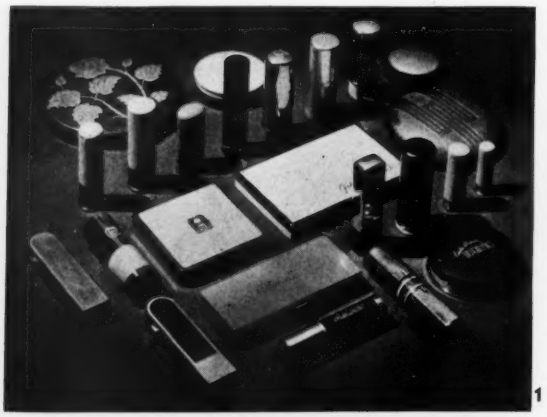
For years brass has been the standard material used as a base for these containers, but recently several items of aluminum have been introduced. Aluminum is considerably lighter than brass and products made from it are now available in an anodized finish which provides a wide range of colors with a bright glossy surface.

In cases where the quantity ordered is large, manufacturers of specialty material can supply containers made to order to meet the individual requirements of one customer's line. Many manufacturers, however, now carry stock or standard types of containers and lipsticks, making it relatively inexpensive for the user to obtain even specially individualized containers at modest prices and in medium quantities.

There are also boxes of metal form covered either with leather, with waterproof fabric coated and grained to appear as leather, velvet, or some other fabric, and lined with velvet or satin.

Many articles such as delicate instruments, safety razors, measuring tools, sewing kits, cosmetics, manicure sets and medals are displayed in boxes which serve as permanent containers. In this field these metal boxes have an advantage for they are made of materials that will withstand constant use over a period of years.

Covered metal-form boxes will stand up under abuse. The fact that tools and machines are used for the various processes of manufacture makes necessary the use of coverings and linings which will stand pulling and stretching during manufacture. The metal shell itself is, of course, sturdy and strong. The covering must be strong enough so that it can be stretched down over the sides of the box, stretched over the edge and tucked down inside without breaking or wrinkling.



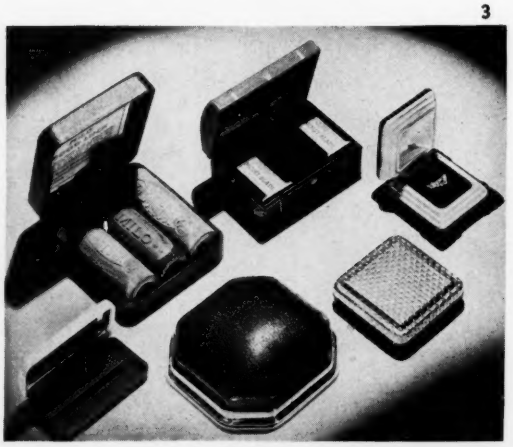
1



2

1. Cosmetic containers combining enamel with metal finishes. Courtesy Scovill Manufacturing Co. 2. Metal containers of nickel, chrome or brass combined with enamel finishes. Courtesy Majestic Metal Specialties, Inc. 3. Hinge lid jewelry and utility cases. Courtesy Farrington Manufacturing Co.

3



THIS LABEL - JALCOLD - MEANS J&L CONTROLLED QUALITY TIN PLATE • • THAT KEEPS PRODUCTION COSTS LOW • • MAKES PLUS VALUE CONTAINERS



JALCOLD helps keep your production uniform and tends to lower your manufacturing costs because it is a special-purpose, cold reduced tin plate made especially for the requirements of your operations.

It has many inherent qualities that work to your advantage — exceptional ductility for deep drawing and forming — extreme flatness — and a clean, smooth surface that takes intricate lithograph designs with sharp definition and color. Jalcold is made of J & L Controlled Quality Steel, rolled to uniform gage and flatness on modern, continuous mills . . . carefully cleaned, tinned and assorted. In Jalcold you get only uniform plate that processes easily, saves you manufacturing time and produces eye-compelling, sales-attracting containers and closures.

Be sure the JALCOLD label appears on every package in your next order of tin plate. Specify JALCOLD — the genuine J & L Controlled Quality Tin Plate.


J & L — PILOTS THE COURSE OF CONTROLLED QUALITY IN STEEL

JONES & LAUGHLIN STEEL CORPORATION
AMERICAN IRON AND STEEL WORKS
PITTSBURGH, PENNSYLVANIA

J&L STEEL

J & L — PARTNER IN PROGRESS TO AMERICAN INDUSTRY

Collapsible Metal Tubes

by W. M. ROSE*

Collapsible tubes have been in use for a century. In the United States, today, they are consumed to the number of a half-billion annually. Considering these facts, a natural deduction would be that this form of container is highly standardized, fully developed, thoroughly exploited. Such a conclusion would be almost wholly wrong. Some standardization, as evidenced by the appended tables, has been achieved. Improvements in tubes and their appurtenances are continually being made. New uses are constantly being found. Fortunately, the manufacture of tubes is sufficiently flexible to permit of frequent and rapid changes to conform to design trends, changes in quantity-price policies and special merchandising and sales promotion plans.

Since there are some sixty different "standard" sizes, seven "standard" neck sizes, six "standard" types of neck openings, seven "standard" types of caps, five "standard" types of sealing, five different cap materials, four body metals and a dozen other minor variables, there is an infinite number of tubes that might be classed as standard. In addition, each printed design is different and only a few "stock" designs are in use.

With practically no exceptions, each order for decorated collapsible tubes is "special," requiring changes extending from metal foundry to box-making, including "set-up" of extrusion machines, re-plating, washing and re-inking decorating machines.

Advantages and Uses

No one type of container can fulfill the requirements for packaging all the different types of products. While it is quite true that collapsible metal containers have recently been successfully introduced as containers for effervescent salts, liquids, tablets and powders, the field in which collapsible tubes are of greatest service and use is that of products in plastic form: toothpastes, cosmetic creams, shaving creams, ointments, adhesives, toilet creams, polishes and the like. In special forms and with special applicators, they are preeminent in the application of medicaments to the eye, the nasal passages and other body cavities, and in the application of adhesives and lubricants.

From the standpoint of customer convenience and assurance, collapsible tubes possess qualities which no other type of container has. Proportion and shape promote ease of handling. The screw-top closure not only provides an effective seal and reseal for the protection of the tube's contents, but is easy to manipulate. Tubed products may safely be used by more than one person, since the product is adequately protected from contamination and the unused part of the product does not come into contact with fingers or other applicators that may carry dirt or infection. There is no danger of breakage or cutting by sharp edges. As tubes are not refillable, the customer may be assured that the contents are genuine, unadulterated. Since the volume of the product is easily discernible by inspection of the outside of the tube, the buyer is assured as to the full weight.

From the standpoint of the product manufacturer, tubes have much to commend them. In addition to relatively light shipping weight, and elimination of breakage, the problems of labelling and capping are solved by the fact that these operations are done by the tube manufacturer. Filling, sealing and cartoning may all be performed on machines that are largely automatic, so that "finishing" and packing labor costs are extremely low.

There is no great trick in drawing tube specifications. The dimensions are determined by the amount of product it is desired to pack or by the size of tubes used in similar price lines by established competing products. The size of the neck opening is, in large measure, determined by the plasticity of the product and the quantity ordinarily used in one application. Thus, "brushless" shaving creams are packed in tubes with large openings, opthalmic ointments in tubes with pin-hole tips.

SUGGESTED TYPE OF TUBE FOR VARIOUS PRODUCTS

	Tin	Lead	Tin-Coated	Aluminum
Tooth Pastes	★			★
Shaving Cream	★			★
Cold Cream	★			★
Vanishing Cream	★			★
Cosmetics	★			★
Depilatories	★			
Vaginal Jellies	★			★
Ointments	★			★
Food Products	★			★
Artists' Colors and Paints	★	★	★	★
Tinting Colors	★	★	★	★
Inks		★	★	★
Adhesives		★	★	★
Cements	★	★	★	★
Belt Dressing		★		★
Engine Compounds		★		★
Greases		★		★
Stain Solvents	★	★		
Hand Soaps	★			★
Leather Softeners		★		★
Insecticides		★		

Molded Caps

The original use of molded plastic caps was, to a large extent, influenced by the desire of a large tube-buyer to improve the appearance of his package. Except when the price of tin is abnormally low, the cost of molded caps compares favorably with tin, especially in the larger sizes. Molded caps are available in several sizes of

* Sun Tube Corp.

XUM

New Product?



Or Well Established Brand



PEERLESS TUBES

Help all to become

BEST SELLERS

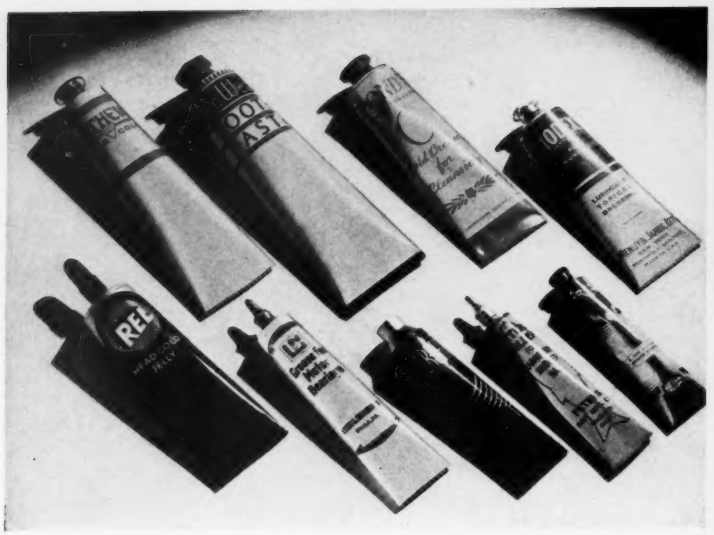
PEERLESS TUBES PRESERVE
AND OUTLAST THEIR CONTENTS

Write to headquarters at Bloomfield or nearest representative.
No obligation for ideas.

PEERLESS TUBE CO.

BLOOMFIELD NEW JERSEY

W. I. FROST, 4990 MELROSE AVENUE, LOS ANGELES, CALIF.
J. E. McLAUGHLIN, SOUTHERN OHIO BANK BUILDING, CINCINNATI, OHIO
W. R. MALECKAR, NORTHWESTERN BANK BUILDING, MINNEAPOLIS, MINN.
ROSE LABEL & BOX COMPANY, 123 MADISON STREET, CHICAGO, ILL.





1. Typical drug product tubes. Courtesy A. H. Wirz, Inc. **2.** Tubes for cements, foods and even bait. Courtesy National Collapsible Tube Co.

stock patterns with round, hexagonal or octagonal top flanges. They are also to be had in a shape that is similar to that of molded bottle caps. Specially designed caps are also used on many products. Cap materials include the phenolic plastics—Bakelite, Durez, Resinox—in black, brown and darker shades of red, green and blue, and urea plastics—Plaskon, Beetle—in white and many light shades and tints, as well as the darker colors. Molded caps may have "ball" or "plug" seats, requiring no cap liners or, like metal caps, may be provided with liners of plain composition cork, foil-faced cork, or of cork or felt faced with black or brown alkali-resistant paper.

Specifications for tubes require the following data:

DIMENSIONS:	Diameter at the shoulder; length from shoulder to open end. Size of neck or diameter of neck opening. Wall thickness at shoulder.
CAP:	Material and type of cap; type of liner.
DECORATION:	Shoulder embossing, if any; coating and number of colors in printed matter.
METAL:	Tin, tin-coated lead, lead or aluminum.

Reasonable manufacturing tolerances should be allowed in diameter, length and weight.

Design and Decoration

The cylindrical shape of collapsible tubes is dictated by the method of manufacture and the method of closing and sealing. Possibilities of variation in structural design are, therefore, nil. Design enters into the appearance of the cap and the embossed decoration on the shoulder, but it is on the "label" or side that design has fullest opportunity. While the fixed cylindrical shape imposes certain limits, these are the only limitations. Label designs may be of any character capable of reproduction by zinc etching, photogravure or half-tone. Decoration may be printed or embossed and printed in from one to four colors on a white or tinted coating. By the use of process plates, additional tints can be secured. The brilliant metallic surfaces currently so popular can also be produced on tubes with a high degree of fidelity. To equal the brilliance of lacquer-coated printing on paper, a similar coating, which is also alkali-resistant, may be applied over tube decoration.

STANDARD SIZES AND CAPACITIES OF TIN, TIN-COATED, LEAD ALLOY AND ALUMINUM TUBES

Diameter x Length	CAPACITY Fluid Ounces	C.C.	Usual Opening and Neck
3/8 x 2	3/4 dr.	2.77	No. 8
1/2 x 2	1 1/2 dr.	5.54	8-10
1/2 x 2 1/2	1 3/4 dr.	6.47	8-10
1/2 x 3	2 dr.	7.39	8-10
1/2 x 4	2 3/4 dr.	10.17	8-10
5/8 x 3	3 dr.	11.09	10-12
5/8 x 3 1/2	3 1/2 dr.	12.94	10-12
5/8 x 4	4 dr.	14.79	10-12
3/4 x 3 1/2	5 dr.	18.48	12-14
3/4 x 4	6 dr.	22.18	12-14
7/8 x 3 1/2	7 dr.	25.88	12-14
7/8 x 4	1 oz. 0 dr.	29.57	12-14
7/8 x 4 1/2	1 oz. 1 dr.	33.27	12-14
1 x 4	1 oz. 2 dr.	36.97	16
1 x 4 1/2	1 oz. 4 dr.	44.36	16
1 x 5	1 oz. 6 dr.	51.75	16
1 x 5 1/2	2 oz. 0 dr.	59.15	16
1 x 6	2 oz. 2 dr.	66.54	16
1 1/8 x 4 1/2	1 oz. 6 dr.	51.75	16
1 1/8 x 5	2 oz. 0 dr.	59.15	16
1 1/8 x 5 1/2	2 oz. 2 dr.	66.54	16
1 1/8 x 6	2 oz. 4 dr.	73.93	16
1 1/4 x 4 1/2	2 oz. 0 dr.	59.15	16-20
1 1/4 x 5	2 oz. 3 dr.	70.24	16-20
1 1/4 x 5 1/2	2 oz. 6 dr.	81.33	16-20
1 1/4 x 6	3 oz. 1 dr.	92.42	16-20
1 3/8 x 5	3 oz. 0 dr.	88.72	20-28
1 3/8 x 5 1/2	3 oz. 4 dr.	103.51	20-28
1 3/8 x 6	4 oz. 0 dr.	118.29	20-28
1 1/2 x 6	4 oz. 4 dr.	133.08	20-28
1 1/2 x 6 1/2	5 oz. 0 dr.	147.87	20-28
1 1/2 x 7	5 oz. 4 dr.	162.65	20-28

Note:—It is possible to obtain even the smallest neck (No. 8) on the largest tube and also a large neck on small tubes (within limits so that the cap does not come within 1/16" from the diameter of the tube).





THIS GREAT NEW FACTORY "CONTAINS" EVERYTHING

Most modern in the country, the Crown Can plant in Philadelphia is planned to manufacture standard metal containers or metal containers of special specifications capable of "containing" almost any kind of product.

Whether it be for delicately flavored cakes and confections; for explosive chemicals and highly volatile liquids; for heavy oils, cement or wax — *Crown Can is now prepared to meet any requirement you may desire, quickly, fully and economically.*

Whatever your metal container problem is, it may be well worth your while to write us about it.



CROWN CAN COMPANY · PHILADELPHIA, PA.
Division of Crown Cork and Seal Co.
BALTIMORE ST. LOUIS HOUSTON MADISON

CROWN CANS

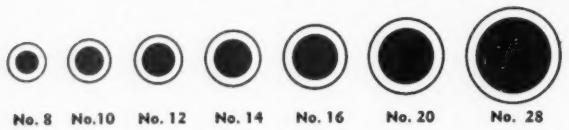
Collapsible tubes may be classified as follows:

1. Pure tin tubes are made of new virgin tin, alloyed with a small amount of copper or other suitable stiffener, in minute quantities. No adulterant such as lead or other soft metals is used in these tubes and they are essentially for use for any product going on or in the human body. Tin tubes are light, strong and durable; chemically inert; and perfectly suited as sanitary containers for foods, cosmetics including tooth pastes, shaving creams and other personal use products.

2. Aluminum tubes are lighter in weight and slightly stiffer than tin. Aluminum tubes require some research in the adaption to certain products, particularly those containing alkalies, but in general, they cover the same field as tin collapsible tubes. However, a new product should be tested for 60 days before tubes are adopted.

3. Lead tubes, known as lead alloy tubes, are made of pure lead with antimony or tin and antimony, and

NECK SIZES AND OPENINGS—ACTUAL SIZE



No. 8 No. 10 No. 12 No. 14 No. 16 No. 20 No. 28

Neck Size	Diameter of Thread	Actual Opening
No. 8	.220″	1/8″
No. 10	.250″	9/32″
No. 12	.280″	5/16″
No. 14	.330″	7/32″
No. 16	.375″	1/4″
No. 20	.438″	9/16″
No. 28	.563″	7/16″

Ribbon, pinhole or diaphragm (blind end puncture type) can be furnished as an alternate opening to the plain round type on all neck sizes except in aluminum. Special data should be obtained on this metal from suppliers.

chiefly used for adhesives, shoe creams, rubber cements and articles where the contents will not be used on the human body.

4. Tin-coated tubes having a lead alloy base with an evenly distributed thin coating of tin on the inside and the outside, are made in such a manner that the two metals cannot be separated. These are the heaviest

CAP TYPES IN METAL OR MOLDED PLASTIC

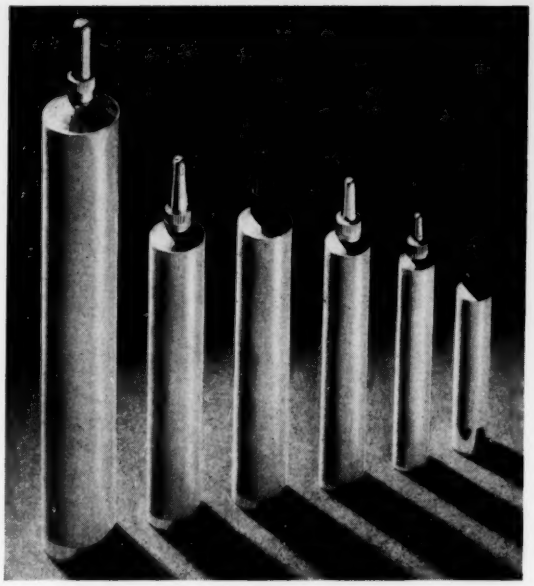


Regular: Round, Hexagonal — Mushroom: Round, Octagonal

weight tubes (most manufacturers make these the same weight as lead alloy tubes) and seem to be declining in volume steadily in the collapsible tube field as the final appearance is not as good as pure tin or aluminum.

Special Types of Tubes

In addition to the standard types of collapsible metal tubes there are available for various purposes certain applicators which may be applied separately to tubes, and others that are integral with them.



3. Caps of metal or plastics for eye tip and nasal tip tubes. Courtesy Standard Specialty and Tube Co.

Eye tip: Eye-tip tubes are often called opthalmic tubes and are used for eye preparations. These are available in tin or lead, and tin tubes are recommended for use if the preparation is to be used on or near the eye. Lead is only suitable for light lubricants or similar use in conjunction with eye-tip tubes.

Nasal tip: Nasal-tip tubes are made in different types and are supplied in tin or lead, with tin tubes suitable for nasal jellies, ointments, and any other preparation used on or in the human body, and with lead-tip tubes supplied for oils, greases, rubber cements, and other commercial purposes.

Screw-eye: Screw-eye tubes are furnished in tin, lead or aluminum and are suitable for rubber cements, pyroxylin cement, adhesives and similar commercial uses.

Plug, pin, etc.: Special tubes are made with heavy conical shaped plugs as a closure, and also with pins for insertion in the neck. These types are used chiefly with adhesives, library pastes and similar products.

Pile pipes: Pile pipes are available in pure tin or aluminum in sizes which fit standard necks and are obtainable with either side or end openings or both. Other special types of pile pipes, vaginal pipes, and applicators are also available.

Applicator tubes: A recent development is a self-contained applicator tube which is especially suited for pile ointments and combines the separate tube and pipe in one package. In this there is no separate applicator to become lost; there is nothing to attach and the container is ready for instant use, and a long slip cap covers the applicator, keeping it free from dust and dirt.

Vaginal pipes: These are made of pure Straits tin, specially treated, and are safer and more sanitary than those made of other material. They can be supplied straight or bent at almost any angle.

DECIDE ON

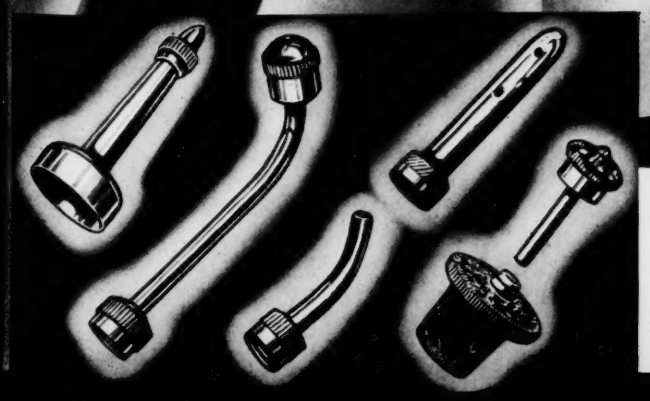
WIRZ COLLAPSIBLE TUBES

They're Geared to Modern Merchandising

If you want to break in with a new product or stimulate sales for an established one, choose Wirz Collapsible Tubes. They meet today's demand for an attractive, sanitary, convenient package. Made of tin, aluminum, tin-coated lead, and lead, Wirz Tubes, expertly made, fit into merchandising plans for creams, pastes, powders, liquids and semi-liquids. Let us discuss your problem . . . we will gladly give you the benefit of our broad packaging experience in modern markets.

Collapsible Metal Tubes — Tin, Aluminum, Tin-Coated, and Lead • Lacquer Linings • Wax Linings • Westite Closures • Applicator Pipes • Metal Sprinkler Tops • Household Can Spouts





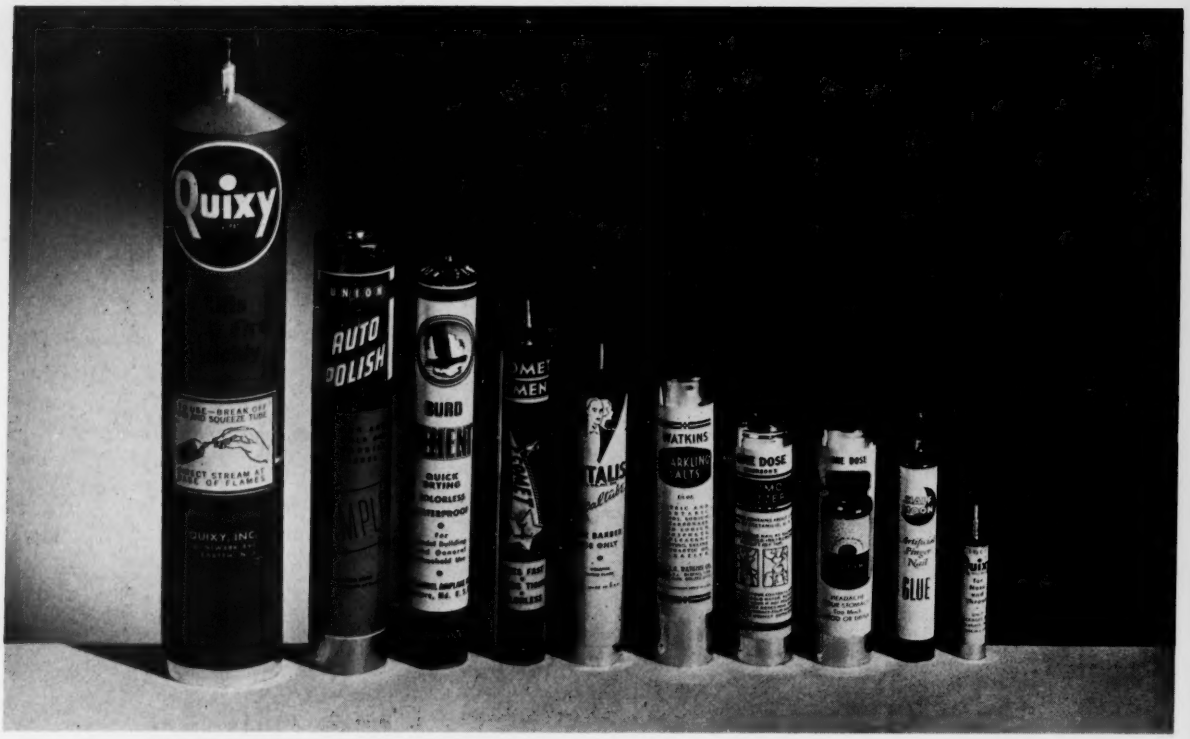
A. H. WIRZ, INC.

Established 1836

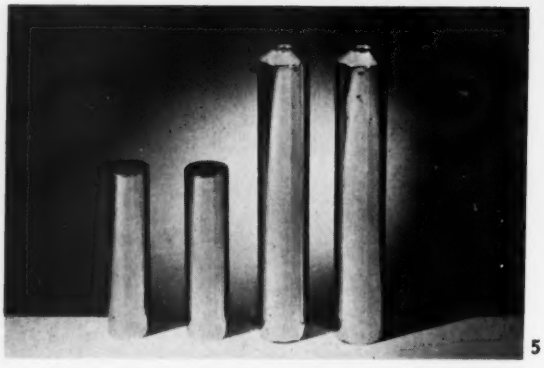
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4. Above: A group of single dose tubes illustrating the wide variety of sizes available and the wide range of applications which have to date been found for these tubes. The large tube at the left forms a fire extinguisher, far less expensive than previously available types. The small tubes at extreme right are for single dosages of headache powders, for glue or for nose and throat drops. **5.** Single dose tubes may be used for powdered as well as liquid and paste products since the product does not have to be ejected through a narrow mouthed opening. Photos courtesy Sun Tube Corp.

Single Dose Tubes

The most recent development in tubes, or better, perhaps, in collapsible containers, is possibly the most significant and important in the history of the industry. This development is significant in that it involves, for many products, a new theory of merchandising, and important in that the traditional field of collapsible tubes—products in paste form—is broadened to include liquids and powders as well as pastes. The development has included not only the basic neckless container, but new methods of filling, sealing, opening, and packing.

Intrinsically, the new type of container—referred to in the trade as "unitainer" or single dose tube—is a collapsible metal tube, without neck or cap, designed to contain a quantity of product sufficient for one dose, application, or serving.

The inherent qualities to which reference is made above include the stability of the sealed container, which is seamless except for the hermetic closure, affording complete protection of the product against moisture, light, and air. Of almost equal importance is the ease and convenience in use which have largely promoted customer acceptance. The interest of the manufacturer is served by reason of the fact that unitainers are unbreakable, light in weight, proof against re-filling or substitution, and economical to use in that labels and labelling, caps and capping, are entirely eliminated.

The use of single dose tubes or unitainers has been of sufficient extent, and the products packaged in them sufficiently varied, to indicate that this container acts as a stimulant to sales. This has been ascribed to the convenience of the "pocket package," to the assurance of the freshness and genuineness of the product, and, in some cases, to the relatively lower price of the unit-quantity package. In certain cases—barber shops, beauty shops, restaurants, and soda fountains, for example—the unit of sale packed in single dose containers has reduced wastage without in any way reducing the quality of the treatment or curtailment of dosage.

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ALWAYS IN THE LEAD WITH
NEW DEVELOPMENTS
NATIONAL
has achieved an outstanding reputation for developing or sponsoring anything that is new and worth while in welding the consumer market for tube-packed products. NATIONAL develops and makes available to the trade all improvements and merchandising ideas which enhance their consumer convenience and increase their salability.
Illustrated are only four examples of how complete and advanced NATIONAL Collapsible Tube service is:
1. SINGLE DOSE SHELL . . . for products in powder form.
2. SINGLE APPLICATION TUBES . . . for liquid products.
3. NO-KAP CLOSURES (a first with National).
4. PEDESTAL CAP TUBES (which give the consumer all the shelf advantages of a bottle, plus all the convenience and economical advantages of a tube).
1
Genuine
Nuro-Shec
SET
TONIQUE
2
NATIONAL also makes all types of tubes for screw top caps as well as NO-KAPS. Whatever your tube problem, NATIONAL will provide the answer. Tell us what you have in mind and we'll send suitable samples and suggestions.
3
SHAVING
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4
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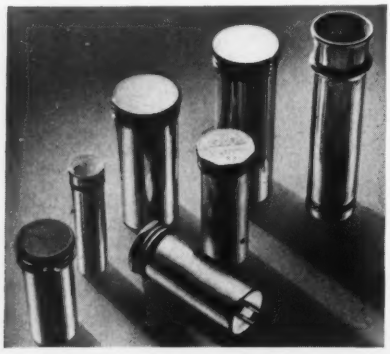
Aluminum Containers and Vials

by G. H. FITCH*

Aluminum containers have found an extensive use as a packaging medium for a variety of products because of their attractiveness, imperviousness to light and moisture, and their non-deteriorating and non-toxic properties. In addition, their strength and lightness is an important advantage to packers and shippers, for such containers are not subject to breakage nor do they entail prohibitive shipping costs.

By means of the impact extrusion and drawing processes used to produce aluminum containers, numerous shapes and sizes are available. For this reason, the container can be more or less adapted to the product to be packaged even though the product may be of a somewhat unusual shape, type or texture. Whether the impact extruded container or the drawn container is the most economical to select depends, obviously, upon the design of the container required. In most cases, aluminum cans of shallow depth and uniform thickness can be most economically produced by drawing, while the deeper containers are more readily formed by the impact extrusion process which consists of "squirting" the metal in its highly plastic form around an extrusion punch, thus forming a shell from a metal slug.

* Aluminum Co. of America. †Patented.



1. Cylindrical aluminum containers with various types of closures and fittings. Courtesy Aluminum Company of America. **2.** Decorated aluminum vials. Courtesy Victor Metal Products Corp. **3.** Aluminum bottles. Courtesy Aluminum Company of America.

To create an attractive appearance, the containers can be enameled, lithographed or given a hard, durable oxide coating by the Alumilite† process. Any one or more of these methods of finishing can be used to give pleasing effects in natural aluminum or colors. The Alumilite process imparts an especially attractive finish to the containers in that it combines the bright metallic luster of the natural aluminum with the plain or colored appearance. Effects in natural aluminum can also be obtained by polishing, dipping, or satin finishing. Printed paper labels can also be readily applied to aluminum containers to obtain other effects.

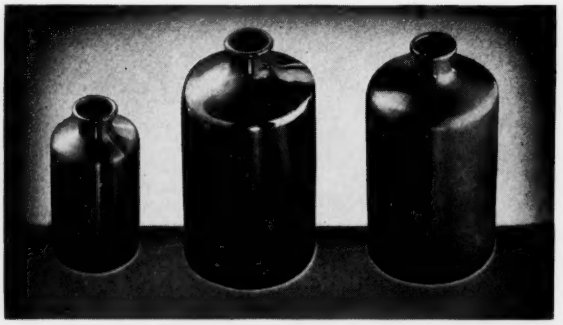
Aluminum containers are particularly suitable for packaging drugs and cosmetics because of the eye-appeal that either the plain or colored finishes afford. In some cases, distinctive combinations of aluminum and glass have been used for products of this type. Small combination units consisting of holders and covers have been used for such items as styptic pencils, lipsticks, shaving soaps, and inhalants. Aluminum pill boxes and vials offer convenience to the consumer in that they may be conveniently carried in the pocket or purse. Aluminum's inherent properties of lightness, strength, chemical inactivity to most materials, and non-toxic properties have been instrumental in bringing about the use of aluminum bottles for packing and shipping essential oils, food extracts, and other similar products. Other uses for the containers are for such applications as flashlight and cigarette cases.

Subsequent threading, beading, piercing, knurling, fluting, and spinning operations can be performed on aluminum containers to further adapt them to the individual packager's requirements. Frequently, lettering and designs are embossed or stamped in the impact extruded containers thus giving permanent indentification to the package. Sizes up to four inches in diameter and ten inches in height can be produced.

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THE RECORDS SHOW THAT..

Better Packages Produce Bigger Sales



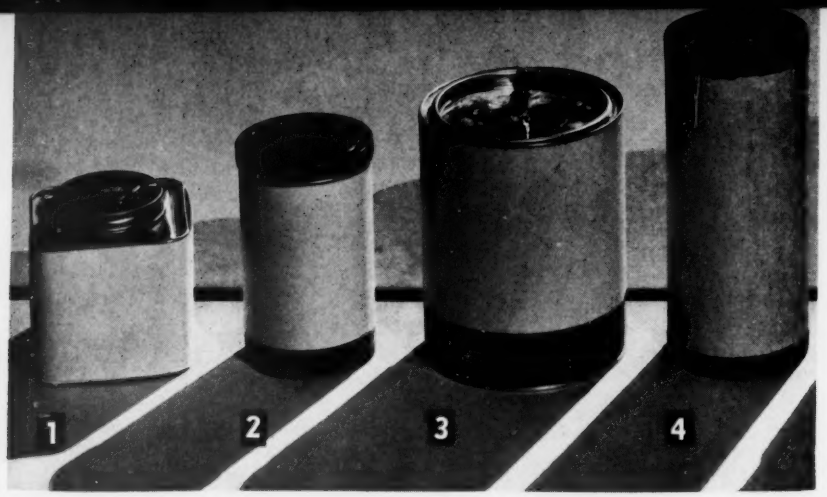
The clear transparency of these smart, attractive containers enable you to SHOW WHAT YOU SELL. Brilliantly decorated, such modern practical acetate packages are powerful sales-producers with both eye-appeal and "buy-appeal." What do they cost? Very little more — we'll gladly submit full information.

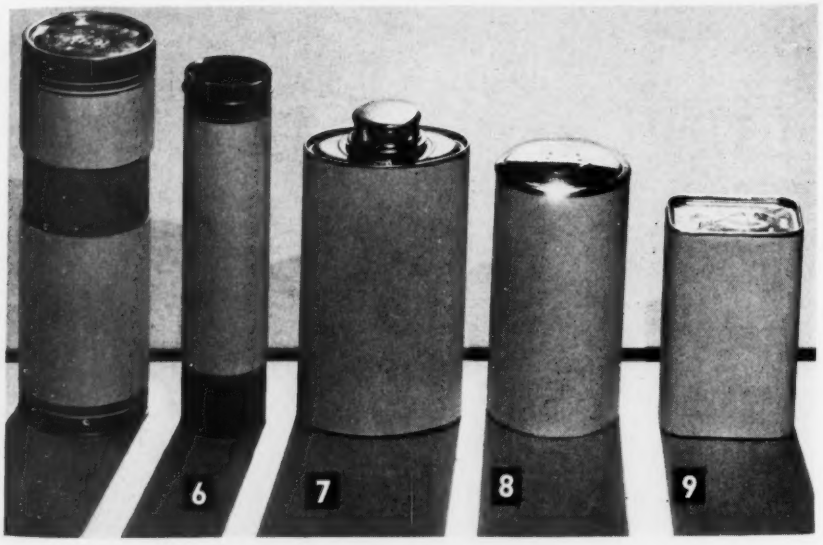
These novel "television" containers are unique in their appeal. The open window invites the eye to inspect the color, texture and appearance of the package contents. Such containers combine the strength and economy of tin with the smartness and transparency of acetate. In after-use as a household canister, these packages are mighty convenient for housewives — to see at a glance what and when to replenish.

The designing of brilliant lithographed tins is really an art. These packages reflect the quality and character of the product — and the prestige of the manufacturer. We are specialists in devising "the last word" in beautiful tin containers. If you have a problem — call on us for practical suggestions. No obligation involved.

GEO. V. CLARK CO. INC. 42-26 13 STREET
LONG ISLAND CITY, NEW YORK

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Styles of fibre containers for dry products. **1.** Screw top can. **2.** Interrupted thread cover can. **3.** Friction plug top can with "Lev-A-Lift" opener. **4.** Paper cap can. **5.** Telescope can. **6.** Metal slip cover can. **7.** Raised neck can. **8.** Planetary top can. **9.** Closed top can. Photos courtesy American Can Co.

Fibre-Bodied Containers

The fibre can bridges the gap in the packaging industry which formerly existed between the paper carton and the tin can. Its commercial uses fill the needs not serviced by either of these industries, although in some cases it overlaps one or the other. However, it has set up a useful field of its own for numerous products demanding an attractive, rigid, and economical container, capable of protecting the contents from deterioration, contamination, substitution, or spoilage. A fibre can may be considered for any dry product, such as spices, foods, drugs, cosmetics, or chemical products, that does not require a hermetically-sealed container, or that can put to sales advantage a more attractive, sturdier package than a paper bag or folding carton. These principles of use apply not only to powdered food, drug, or chemical products, but equally as well to such miscellaneous items as automotive or hardware parts, rubber goods, surgical dressings, and many others.

Producers of packaged goods know that in order for the container to be successful it must appeal to the consumer as attractive, easy to open and reclose, and it must provide protection to the contents before and after it is opened. With the use of a well-designed and lithographed label, the fibre can is a smart modern container, appealing in appearance. Various styles of fittings, trimmings, and openings are available that are designed to facilitate the ease with which the consumer may open and reclose the container.

The bodies of fibre cans are constructed of specially made fibre-board that adequately protects the contents from deterioration in all climates.

The fibre can industry is divided into two general classifications: one branch manufactures containers to hold products which are dry in substance; the other and newer branch is devoted to the development of fibre packages to hold liquid or moist products. Very few manufacturing plants are set up to properly service both liquid and dry products, since the containers are dis-



Brown—often considered an "earthy" color is used profusely by nature for many a practical purpose. Its warmth and rich hue offer a perfect background for more vivid colors . . . Evidence of the adaptability of this color in modern package design is shown above. But, Continental's designers do more than endow a package with the power to attract. They consider practical factors too, such as construction which permits easy filling, shipping and convenient usage. With hundreds of shapes and sizes available, they'll find one to suit your product . . . If your problem is one where practical consideration comes first, whether it be color, design, or shape, we urge you to consult Continental.

ONE OF A SERIES DEVOTED TO THE USE OF COLOR IN PACKAGING DESIGN. COPYRIGHTED, 1938.

Continental Can Company

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YOUR PACKAGE OF TOMORROW



VIALS BY VICTOR

Lithographed decoration with a brilliancy identical to that used on the famous Victor Collapsible Tubes

Smart merchandizers appreciate the value of an attractive vial as an aid in the sale of their product.

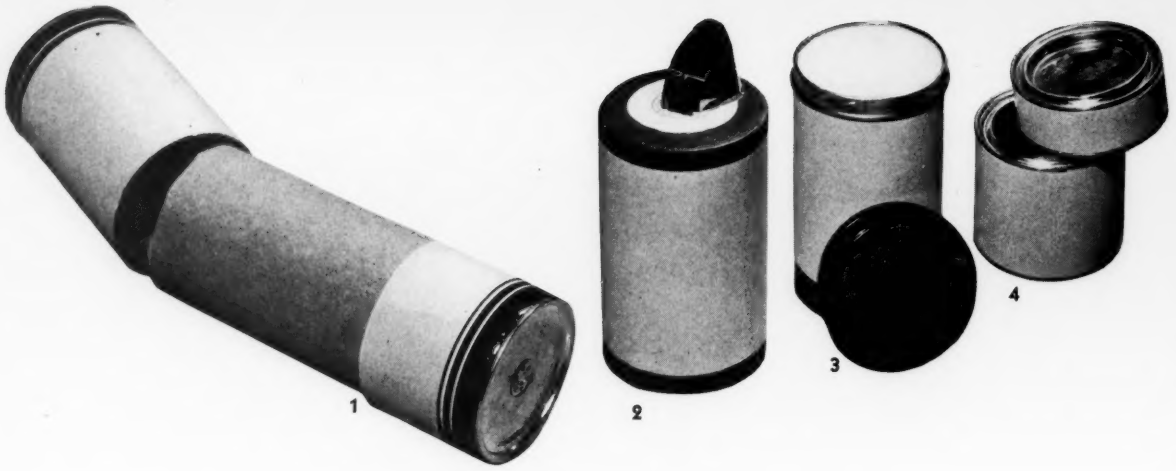
VICTOR VIALS

are not only beautiful, but are fitted with especially formed slip and screw covers that do not grip or stick. Ideal for powder, tablets, pills, capsules and similar products.

Write today for more information and samples

VICTOR METAL PRODUCTS
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203 Diamond Street Brooklyn, N. Y.

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Special use designs of fibre containers. **1.** Telescope type package fitted as an insecticide spray gun, equipped with a dredge opening and a felt bottom on the inner tube. **2.** Paper top can with metal pouring spout for cereals, salt or birdseed. **3.** Interrupted thread top can with inside paper cover sealing the contents. **4.** Double friction plug top can forming a two-compartment package for related products such as photo developing powders. Photo courtesy American Can Co.

similar as to construction and manufacturing methods. Both branches of this industry have wide and varied assortments of styles, types, and sizes of containers, which are specially designed for particular commodities, or for various products requiring similar containers.

The fibre cans used for dry products may be divided into nine distinct types, all of which are made in a wide variety of sizes and shapes. The physical construction of each type will vary somewhat, according to the ideas and equipment of the manufacturers. In general terms, these types are as follows:

Paper-Cap Cans

The paper-cap fibre can is generally confined, because of technical problems, to cylindrical shapes for commercial use, although one or two oval cans have been marketed. This type can is made with fibre-board ends, called paper caps, that are either removable or sealed on. The top end is frequently fitted with a pouring or sprinkling device. The caps are furnished in a variety of colors and, within limitations, may also be embossed or printed. Body labels may be applied either by the can-maker (putting them on underneath the cap-ends) or by the user after filling. In the latter instance, they are placed over the flange of the cap and seal the package. This type package makes an excellent container for table salt, bread crumbs, cereals, or other products requiring the least expensive type of container that will satisfactorily hold the contents.

Friction-Plug-Top Cans

The friction-plug-top fibre cans have metal ends seamed on the body, and are manufactured with round, oblong, oval, or square bases. The plug is securely held in place by friction, and yet may be pried loose without annoyance. The throat of the friction-ring may be curled, eliminating the possibility of cutting oneself on a raw edge. This is particularly desirable in a top where the opening is large enough to permit the hand to enter. Sometimes the plug has a special lifting device to facilitate opening; otherwise, a coin or some such improvised lever is requited to remove the plug. This type can is generally used when a tight reclosure is desired, and is an acceptable container for baking powder, cocoa, tea, spices, fertilizers, and similar products.

Metal Slip-Cover Cans

The metal slip-cover fibre can is preferably made on small oval or round bases, and is an economical container for products requiring a full opening. The cover must be furnished with a raw edge if the labels are to be applied over the flange after filling; otherwise a curled edge flange is desirable. The ends can be decorated or embossed to suit the purposes of the user.

Interrupted-Thread-Cover Cans

The interrupted-thread-cover fibre can is an unusually fine container for quality products. The covers are easily removed by a slight twist of the hand, and yet are securely locked on when assembled. The full opening in the top permits easy access to the contents. This container may also be furnished with a drumhead seal assembled in the top, making the can tamper-proof.

Closed-Top Cans

Cans of this classification have metal ends with a closed bottom and top seamed on, and provide a tamper-proof non-refillable package. The tops may, or may not, be fitted with revolving or push-slide dredges, pouring spouts, and semi-perforated knock-out holes. Containers of this type make an excellent package for scouring powder, spices, birdseed, insecticide, powdered hand-

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STRAIGHT FACTS.. WITHOUT DISTORTION



PACKAGING *minus* DOUBT!

You may twist your reflection in these trick mirrors when you're on a lark... but you've got to get down to *straight thinking* in PACKAGING for Sales. • Have you given a thought to "NATIONAL" Container Service? Here stands a veritable storehouse of ideas for Package design and display! • You'll find "NATIONAL" enthusiastic about your problem, experienced in practical application... alert and capable in spotting your line for active selling.

***Get* STRAIGHT *on* PACKAGING *Call* "NATIONAL!"**

NATIONAL CAN CORPORATION

SUBSIDIARY OF McKEESPORT TIN PLATE CORPORATION

EXECUTIVE OFFICES • 110 EAST 42nd STREET • NEW YORK CITY

Sales Offices and Plants • NEW YORK CITY • BALTIMORE • MASPETH, N. Y. • CHICAGO • BOSTON • DETROIT • HAMILTON, OHIO

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soap, etc. They are also widely used as a sealed container for automotive parts such as coils, piston-rings, distributors, filters, etc.

Planetary-Top Cans

The tops of these cans are two-piece, consisting of an undercap crimped on to the body, and a revolving overcap assembled to the undercap. The overcap is made of nickeloid to provide a high-lustre end of striking appearance. The tops have a variety of sifter-hole arrangements, and this package is excellent for such products as talcum powder, insect powder, grated cheese, deodorant crystals, and fire-extinguisher chemicals, permitting them to be removed conveniently.

Raised-Neck-Top Cans

The top of this classification of fibre cans consists of a protruding neck assembled to the breast of the can. The neck is perforated with single or multiple openings, depending upon the powder contained in the package, and is especially designed for packaging talcum or tooth powder. The neck is fitted with either a slip-on or revolving overcap to provide a closure. It is generally used on round, oval, or oblong bases up to one-pound capacity, with a wide selection of tops and fittings.

Telescope Cans

These packages are made in three segments: An inner tube, and upper and lower outer tubes. The fibre bodies are fitted together so that the outer tubes act as closures for the inner tube. This package is frequently used as a tamper-proof mailing case, and the address label may be applied over the joint to seal the package.

Screw-Top Cans

There are two styles of screw-top cans, one having the fibre body threaded outside at the top, and the other type has a threaded neck which is thrown up from a crimped-on breast to which the cover is assembled. Screw caps are generally knurled and curled.

Spirally-Wound Fibre Can

The construction of the body of a spirally-wound fibre can permits the use of many different fibres and adhesives in its production, which makes it adaptable to many purposes. In the manufacturing process ribbons of fibre are wound around a steel mandrel, the diameter of which is the same as the inside diameter of the can to be produced. As these ribbons are wound on the mandrel angularly, one over the other, and so placed that the top one overlaps the joint on the under ply, there can be produced a tube of any desired length and construction, from two plies of one kind of fibre to many plies of several kinds of fibre, resulting, as in the case of the two-ply tube, in a thin tube, and, in the case of the multi-ply, a very heavy tube, or core, of any strength desired.

As the original tube, from which the can bodies are made, is composed of several individual ribbons, it is self-evident that almost any combination of material can be used, and, as the adhesive is applied to each individual ribbon, almost any adhesive can be used for any particular ply of ribbon. For instance, a body can be produced having the first ply of parchment paper, the second ply of almost any thickness of fibre, a third ply of different material, while a fourth ply can be a ribbon of colored paper, which would be wound on the outside of the tube and thus form a colored can.

In the spirally-wound fibre can, almost any materials can be used, such as glassine, manila, kraft, straw chip, etc., and a ply of these materials can be introduced at almost any place in the body, to meet the requirements for which the can is intended. Spirally-wound cans can only be made with round bodies, because the ribbons of fibre must slip around the mandrel, but this characteristic has its merits, as it permits continuous production, at a high rate of speed, with the resultant low cost of manufacturing. After the can-bodies are wound into tubes, the length of which are determined by multiples of the length of the can being made, the tubes are hand labeled with strip (multiples of single labels made in one strip) labels and then cut into the proper can-length.

Convolutely-Wound Cans

In producing the convolutely-wound fibre can an automatic machine is used and the ribbons are wound squarely on a mandrel, which revolves the required number of revolutions to complete the body, giving the necessary number of plies of the fibre ribbon. The ribbon is automatically cut and the can-body moved along the mandrel to the position where the label is applied, which operation is accomplished during the time the next can-body is being rolled. The body is then ejected from the mandrel in completed form, ready to receive the proper caps, or ends, which can be either fibre or metal in the round body, but metal only on irregular shapes.

The shape of the body depends upon the shape of the mandrel, which can be either square, oval, oblong, hexagonal, triangular, or almost any shape where a ribbon of fibre can be wrapped tightly and fitted snugly to the mandrel. Corrugated bodies are not possible, as the fibre cannot be held in the grooves while winding.

The convolutely-wound can has one characteristic which limits it to some applications. It is made completely of one ribbon of fibre and one adhesive, therefore cannot be lined with parchment or glassine.

Choosing the Fibre

There is no one standard body construction suitable for all the various products put into fibre cans. The right fibre materials must be worked out in the laboratory for each specific product to be packed. Products which are hydroscopic, or which will deteriorate if exposed to humidity, are put into cans with damptite, moistureproof bodies. Some products, such as spices, have a high percentage of essential oils which require specially constructed greaseproof bodies.

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GLASS CONTAINERS AND CLOSURES

SECTION SIX

Pages 199 to 236

GLASS BOTTLES AND JARS

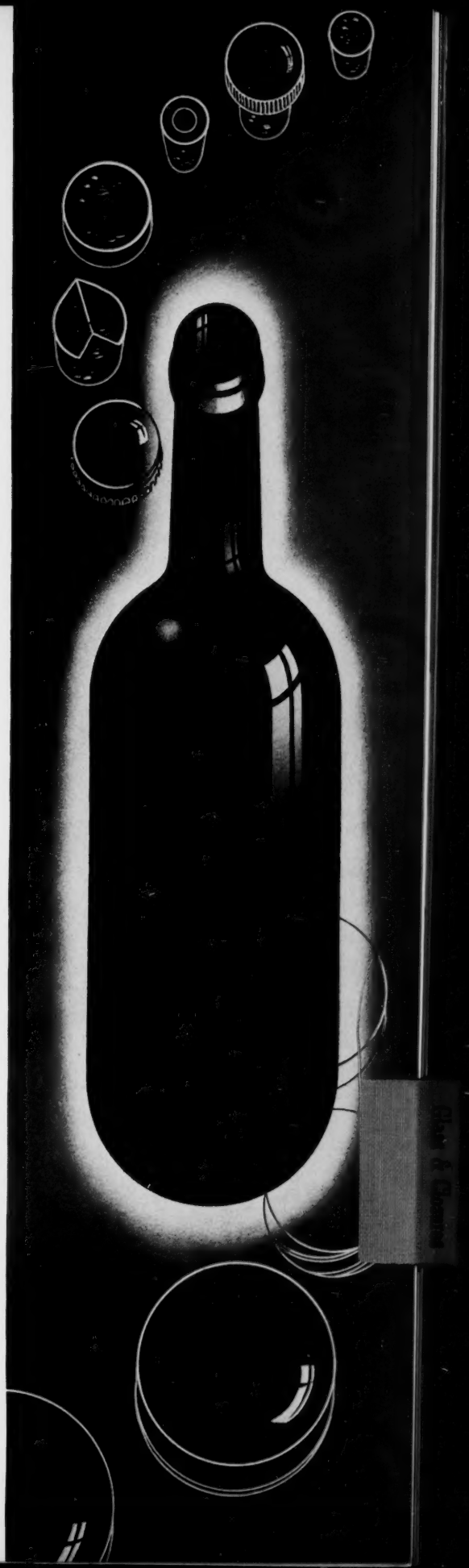
GLASS VIALS, TUBES AND AMPOULES

CLOSURE SEALING COMPOUNDS

PRIMARY AND SECONDARY CLOSURES

GLASS FINISHES FOR CLOSURES

LININGS FOR PACKAGE CLOSURES



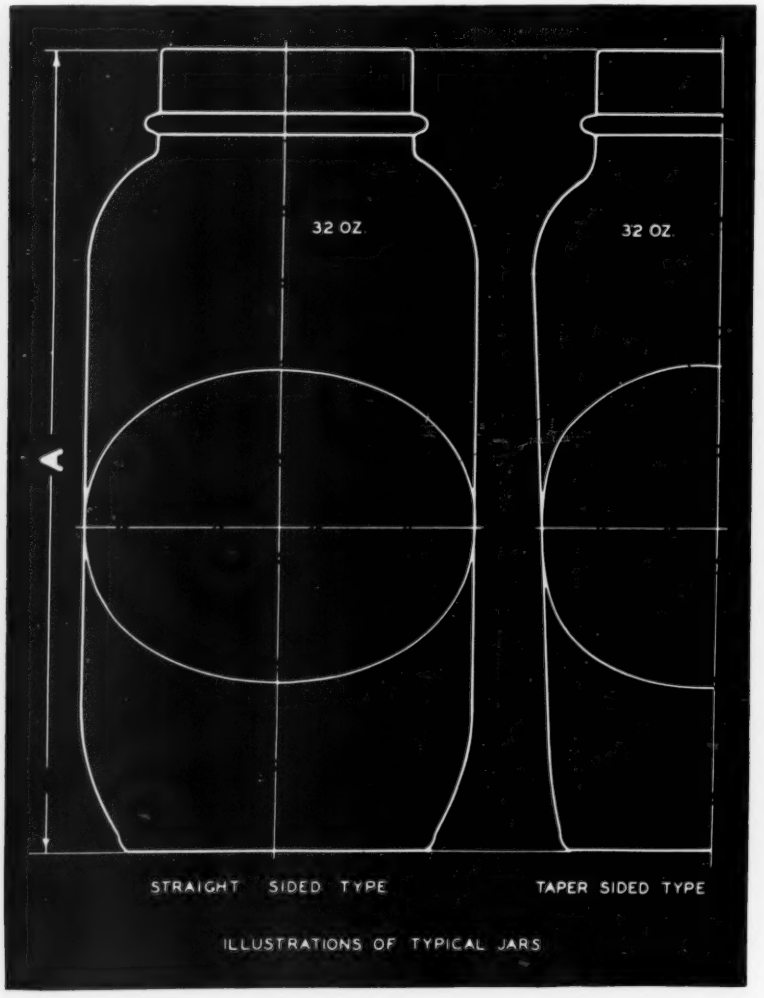
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Glass Bottles and Jars

The glass container industry is an extremely old one which has, however, undergone a series of basic changes in the past 30 years, reflected both in the manner of production and in the manner in which packages are produced and designed. Some segments of the industry still operate under the age old hand methods, producing fine quality, highly specialized containers—generally for the cosmetic and related industries.

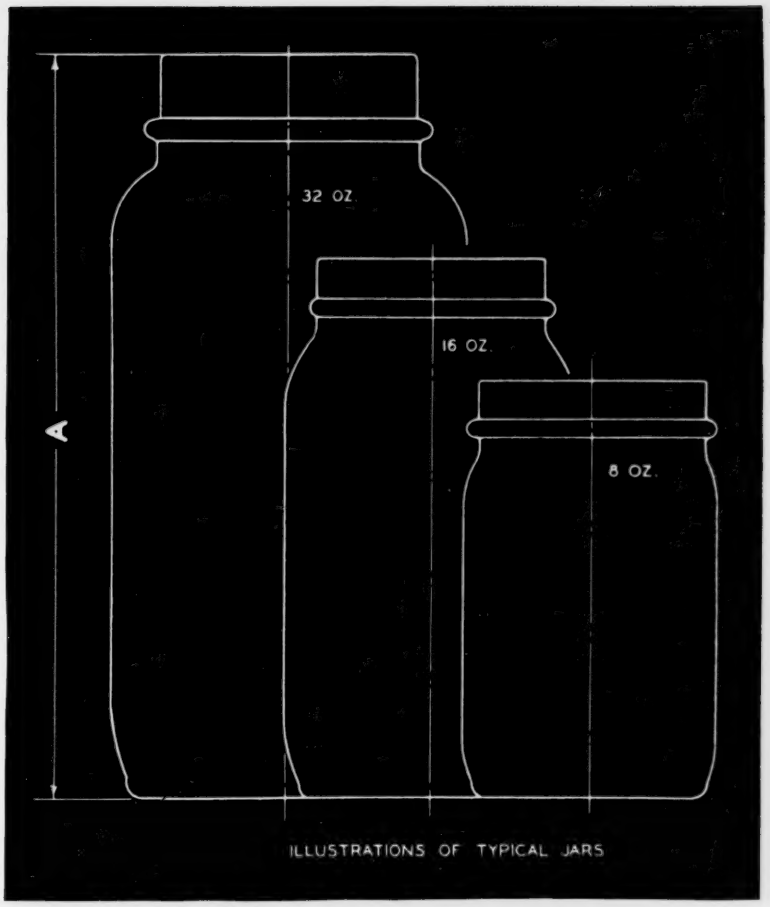
On the other hand, the major portion of the glass industry produces its products in highly mechanized, virtually automatic plants, where mass production permits of low cost, uniformity and volume delivery. Even within the automatic production division of the field, further specialization exists. Some equipment is particularly suited to the production of wide mouth containers, other equipment better suited to the making of pressed ware or narrow mouth bottles. In respect to the companies operating in the glass field, specialization may or may not be maintained. Some companies make only one general type or classification of containers. Others are equipped with production facilities to make several or all types. The packager's first decision, therefore, in seeking a source of supply, must be the determination of the type of container, since type tends to determine possible sources of supply.

While the mechanical revolution in glass production methods had its inception over 30 years ago, the form of glass ware did not greatly change until a much more recent time. Within the last few years, however, both on the individual initiative of glass producers and on the



ILLUSTRATIONS OF TYPICAL JARS

1. G.C.A. Standard Oval Wide Mouth Food Container Jar. The diagram at the right illustrates the standard shape and cross section for wide mouth food containers as adopted by the Design and Specification Committee of the Glass Container Assn. Jars made under this specification may vary in external decoration but will conform in basic shape. The specification covers capacities from 4 fluid oz. to 66 fluid oz., the 32-oz. size being here shown. Specification covers overflow, maximum weight of jar, maximum height of jar and maximum dimension of finish. Any suitable G.C.A. glass finish can be had, provided it does not exceed the specified maximum.



2. G.C.A. Standard Plain Round Wide Mouth Food Container Jar. Three sizes are here illustrated out of 16 specifications ranging from 4 oz. to 107 oz. capacity. Dimension A indicates maximum allowable height under this specification. Maximum weights and finishes are likewise specified. Tolerances for capacity, weight and body dimensions are in accordance with G.C.A. No. 1 standard tolerances.

part of the Glass Container Assn., extensive research has been carried on to the end that today glass packages are being scientifically designed for convenience in production, filling, handling and use, for shop resistance and other desired physical qualities and for lighter weight.

Types of Containers

Glass containers may be classified by several criteria. The glass container industry has promulgated the following general classifications and this terminology is utilized in the trade:

1. NARROW NECK FOOD CONTAINERS
   This classification includes the following glass containers:—Catsup, chili sauce, cider (non-carbonated), clam juice, coffee (liquid), condiments, cruets, fountain concentrates, grape juice (non-carbonated), loganberry juice (non-carbonated), orange juice (non-carbonated), oyster cocktail, pectin, prune juice (non-carbonated), salad dressing, spices (liquid), syrup, table sauces, tomato juice, vinegars.

2. WIDE MOUTH—FOOD CONTAINERS AND JARS
   This classification includes the following glass containers:—Anchovies, candies, caviar, celery salt, chop suey (not sauce), coffee, crushed fruits, horse radish, jams, maraschino cherries, marshmallow cream, mayonnaise, mince meat, meats, mushrooms (not sauce), mushroom spawn, mustard, olives, onions, peanut butter, pickles, preserves, relish, salad dressing (w/m jars only), salt and pepper style shakers (for packers use), sea foods, soups, spaghetti, sugar vegetables.

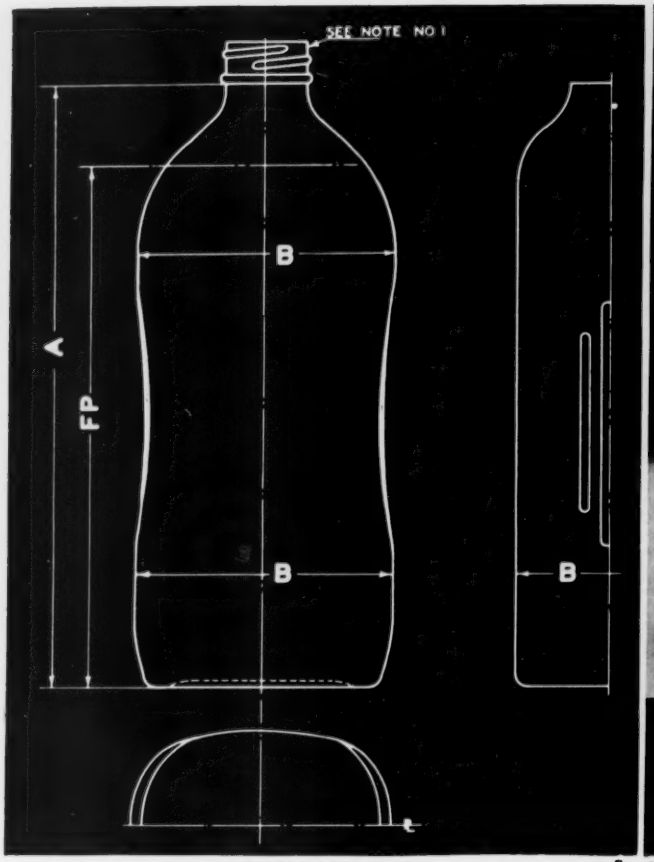
   Included in this classification are also any other wide mouth jars or containers which are used by packers for condiments and food products not specifically mentioned in the group of products which are herein listed.

3. PRESSED—FOOD WARE
   Same as 1 and 2 not including domestic jelly glasses.

4. PRESSURE AND NON-PRESSURE WARE
   This classification includes the following glass containers:—Chocolate milk drinks (beverage style containers), ginger ale, water (carbonated), water (non-carbonated), siphon bottles, soda, soft drinks (non-carbonated).

   Special note should be taken that this classification

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3. G.C.A. Standard Stubby Rubbing Alcohol Bottle. A 16 fluid oz. capacity bottle having a maximum weight of 12 oz. Dimension A, from bottom of finish to bottom of bottle, is 7 5/16 in. Dimension FP indicates filling point 6 5/16 in. above table level. Dimensions B are 2 17/64 in. by 3 9/64 in. The bottle may be made with any suitable G.C.A. glass finish, neck and shoulder contours being varied to meet the requirements of the finish used. Body of bottle may be plain or decorated, as desired. Decorations exceeding .032 in. in depth are not considered good practice. **4.** Left: Rubbing alcohol bottle, 16 oz. capacity, 16 5/8 oz. weight, 8 1/2 in. in height. Right: Stubby rubbing alcohol bottle, conforming to specification described in caption 3. 16 oz. capacity, 12 oz. weight 7 13/16 in. in height. Photos Courtesy Owens-Illinois Glass Co.

does not include fruit juices, beer, wines, cordials, champagne, gin, whiskey or any kind of alcoholic liquor or beverage.

5. Beer bottles

Includes all bottles to be used as containers for beer, ale, porter and all other alcoholic cereal beverages bottled under carbonation. This classification not only covers the generally accepted beer style container but also any other style of container used for products as explained under this caption.

6. Liquor ware

This classification includes the following containers:—Benedictine, bitters, brandies, champagne, cordials, Creme de Menthe, flasks (for alcoholic beverages), gins, rum, vermouth, whiskeys, wines.

Also includes all alcoholic liquors and beverages except beer, porter, ale and other alcoholic cereal beverages bottled under carbonation.

7. Medicinal and toilet ware

This classification includes the following glass containers:—Acid bottles (not incl. 5- and 10-gal. carboys), argyrol, bath salts, bay rum, brilliantine, capsules, castor oil, chemicals, citrate of magnesia, cod liver oil, cosmetics, cuticle oil, cuticle remover, deodorants, dentifrice, druggists presc. ware, embalming fluid, essential oils, face creams, flavoring extracts, hair tonics, insecticides, iodine, liniments, lotions, merchurochrome, mouth wash, nail polish, nursers, perfumes, peroxides, pharmaceuticals, proprietary medicines, pomades, sachet, serums, shampoos, shaving cream, smelling salts, soaps, spraying machine jars, sterilizers, tablets, talcum powders, toilet preparations, toilet waters, vaselines, and witch hazel.

Included in this classification are also any other containers manufactured for products not specifically mentioned in this list which, however, because of their general character belong to this group.

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Your Product will be

TALKED ABOUT

when a KIMBLE VIAL *carries it!*



If you're looking for the one container that has convenience of design and shape, compactness, crystal transparency, and VERSATILITY enough to solve a great variety of SAMPLING or PACKAGING needs—it's a KIMBLE GLASS VIAL!

Remember—there is no substitute for GLASS. Glass is PERMANENT—and Kimble Vials are fabricated of fine, clear, fully annealed glass of high transparency and brilliance. Miniature "show-windows" that win and hold attention.

There's a Kimble Vial for your specific needs—or we'll design one for you! Our nearest Branch Office is at your service.

• • • The Visible Guarantee of Invisible Quality • • •

KIMBLE GLASS COMPANY • • • • VINELAND, N. J.

NEW YORK • • CHICAGO • • PHILADELPHIA • • DETROIT • • BOSTON

8. General purpose containers

This classification includes the following glass containers:—Ammonias, artists colors, battery jars, bluings, carboys (5 gal.), carboys (10 gal.), cement, cleaning fluids, dyes, fire extinguishers, floats, floor wax, flower pots, glue, inks, linseed oil, mucilages, oil dispensing bottles, oil stove reservoirs, pantry jars (not packers ware), paints, polishes, refrigerator bottles (not packers ware), sewing machine oil, shakers (for table use only), shellac, soap dispensing globes, stain, table cream jars (1 oz. and 2 oz.), turpentine, varnish, washing fluids.

Includes all other miscellaneous items which cannot be classified in any of the other eight classifications listed.

9. Milk bottles

This classification includes the following glass containers:—Cottage cheese jars, cream bottles, milk bottles, milk shape liquid malted milk or chocolate milk bottles used by dairies.

The following containers should be excluded from the milk bottle classification:—Narrow neck or soda style bottles used by dairies or soft drink bottlers for liquid malted milk or chocolate drinks. (See beverage.) Infants' nursing bottles. (See medicinals and toilets.) Jars used for malted milk or other milk products in powdered or granular form. (See wide mouth.) 1 oz. and 2 oz. table cream jars. (See general purpose.) Mushroom spawn bottles. (See wide mouth food.)

10. Domestic fruit jars

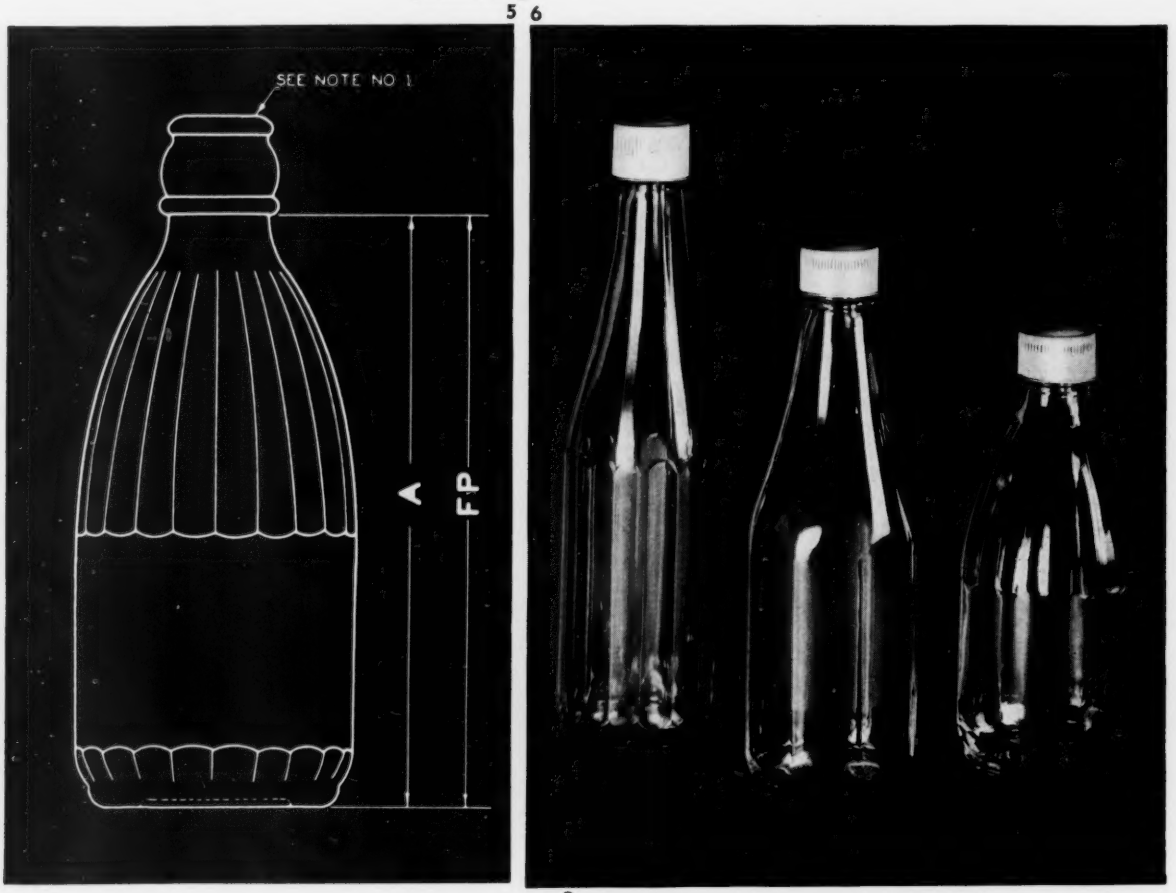
To include all wide mouth containers to be used for home preserving of fruits and vegetables. Does not include packers ware for packaging commercial products and which can be re-used in the home for domestic purposes after the package has been emptied of its contents.

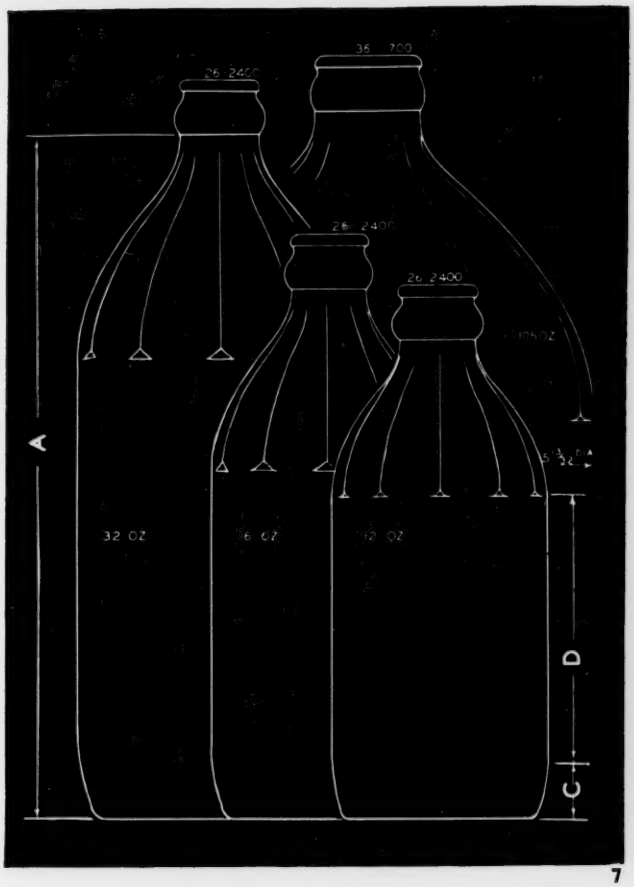
11. Domestic jelly glasses

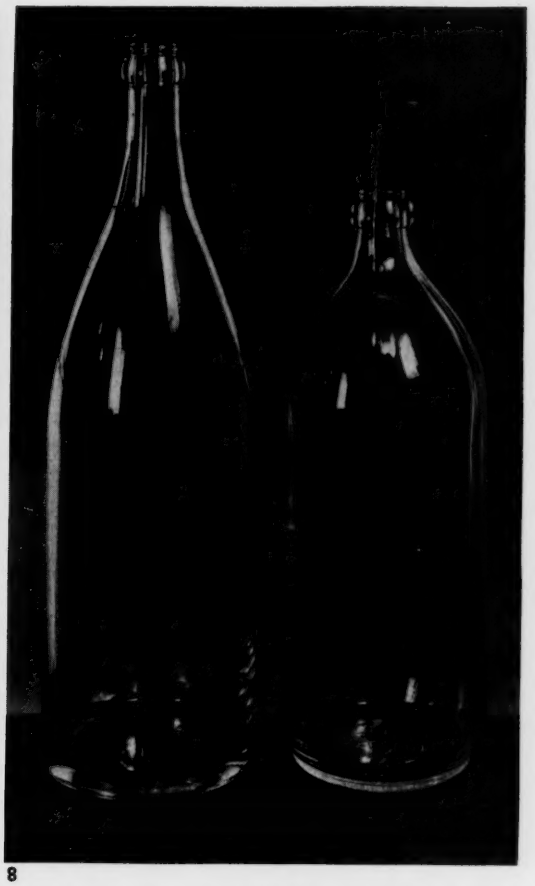
To include all jelly glasses to be used for home

5. G.C.A. Standard Round Stubby Catsup Bottle. A bottle of 12 3/4 fluid oz. capacity, with a maximum weight of 9 oz. Filling point is 5 29/32 in. above bottom of bottle. Bottle may be made with any suitable G.C.A. glass finish, neck and shoulder contours being varied to meet the requirements of the particular finish used. **6.** Left: Standard catsup bottle, 14 oz. capacity, approximately 13 oz. weight. Center: Superior catsup bottle, 14 oz. capacity, approximately 8 1/4 oz. weight. A graphic illustration of the possibilities of weight reduction through planned design.

5 6







7 8

7. G.C.A. Standard Round Stubby Juice Bottle. Available in capacities ranging from 8 oz. to 105 oz. The 8-oz. capacity bottle weighs 6 oz. The 105-oz. capacity bottle weighs 32 oz. Dimension D indicates space for label. Closure finish and surface decoration may be varied within this specification. **8.** Left: Old style juice bottle, 32 oz. capacity, 23 1/2 oz. weight. Right: New style juice bottle conforming to specification in preceding caption, 32 oz. capacity, 15 1/4 oz. weight.

packing. Does not include packers ware for packaging commercial products.

The second form of classification, of particular interest to the packager unfamiliar with the glass field, is that which draws a distinction between stock molds and private molds For purposes of definition, there are three such types, as follows.

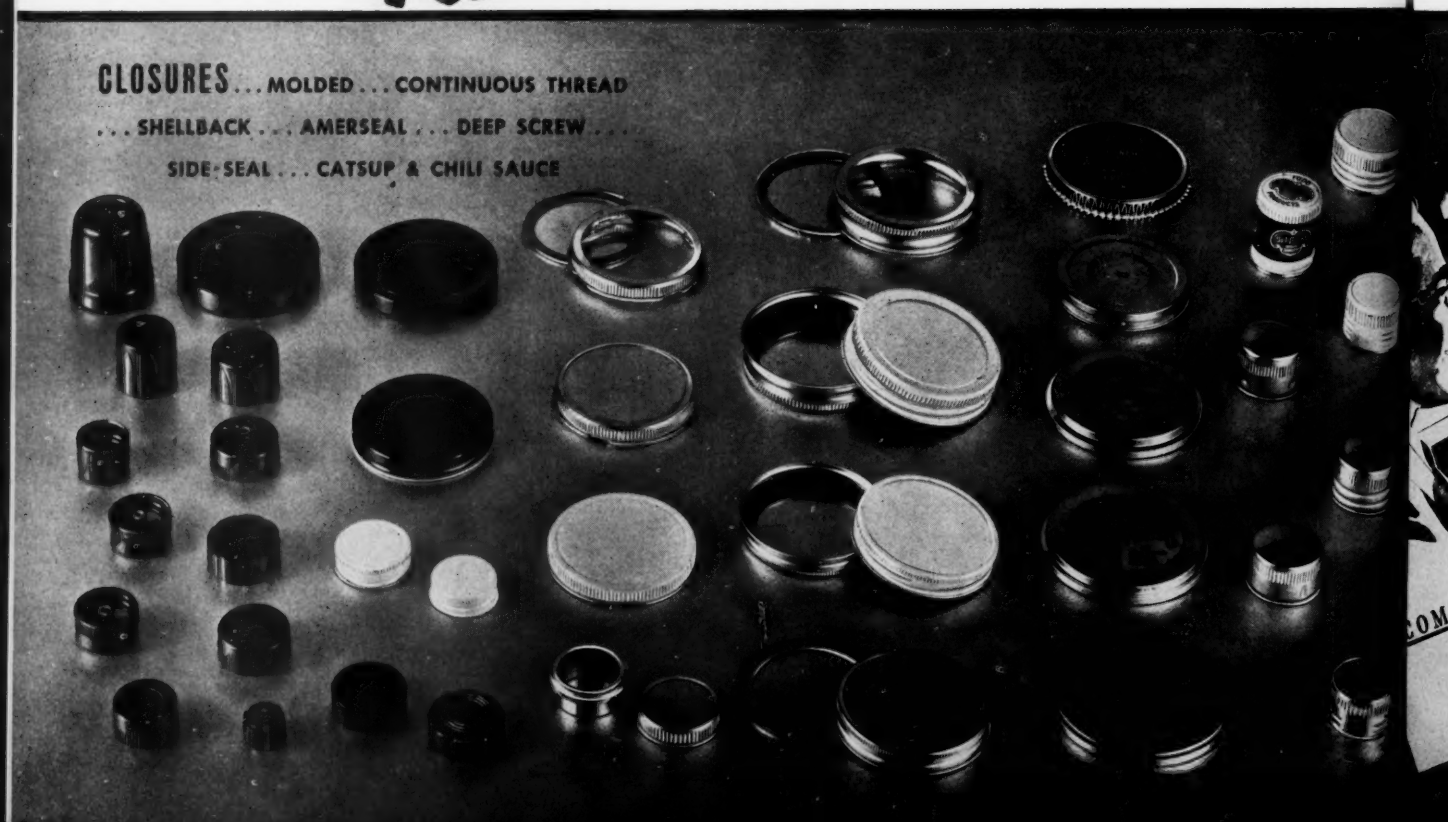
A. Stock containers. These are types usually ordered in relatively small quantities and hence made up for warehousing in advance of receipt of orders.by the glass manufacturer Many pharmaceutical and cosmetic types fal into this category B. Stock mold containers. Containers manufactured on order from molds owned and prepared in advance by the glass supplier and available, generally, to al purchasers who wish to use them. There are many thousands of such stock molds in existence, including specialities of every sort and many of the most familiar wide mouthed and narrow mouthed package lines. In many instances, such molds are exclusive with a single company. In other instances, virtually identical molds exist at several sources of supply, having been manufactured in conformity with specifications set up by the Glass Container Assn., a cooperative organization sponsored by the glass manufacturing industry.

The use of stock mold containers does not condemn the packager to uniformity of package appearance with every other manufacturer choosing to use the same stock mold. This is true because the glass container is only a part of the completed package and individuality may be secured, in spite of the use of identical glass containers, through differentiation of supplementary package parts such as labels, closures, cartons, etc. Further differentiation may, in some instances, be secured through change in the surface decoration molded integrally with the glass container itself. Thus raised surfaces, stipplings, lettering and similar effects may be secured on containers of which the basic shape is governed by the existence and use of stock molds.

C. Private mold containers. These are packages designed especially for the use of a single company. Molds are here manufactured as part of the process of



COMPLETE RESPONSIBILITY ..



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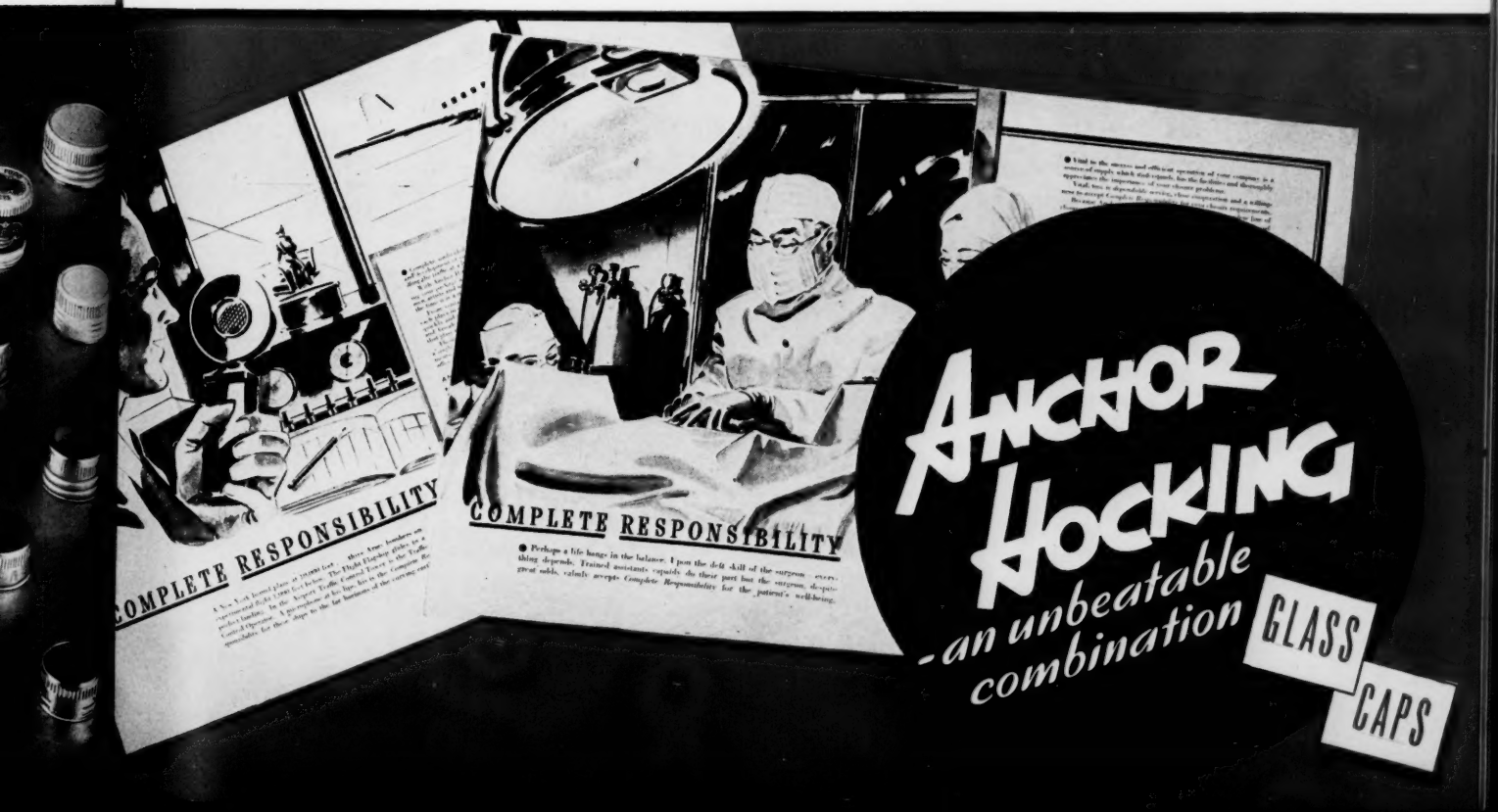
...y...

Anchor Hocking is thoroughly reliable, equipped and capable of accepting *Complete Responsibility* for your packaging requirements—from container, to closure to carton. In addition, our complete line of tumblers and pressed ware offers many premium ideas.

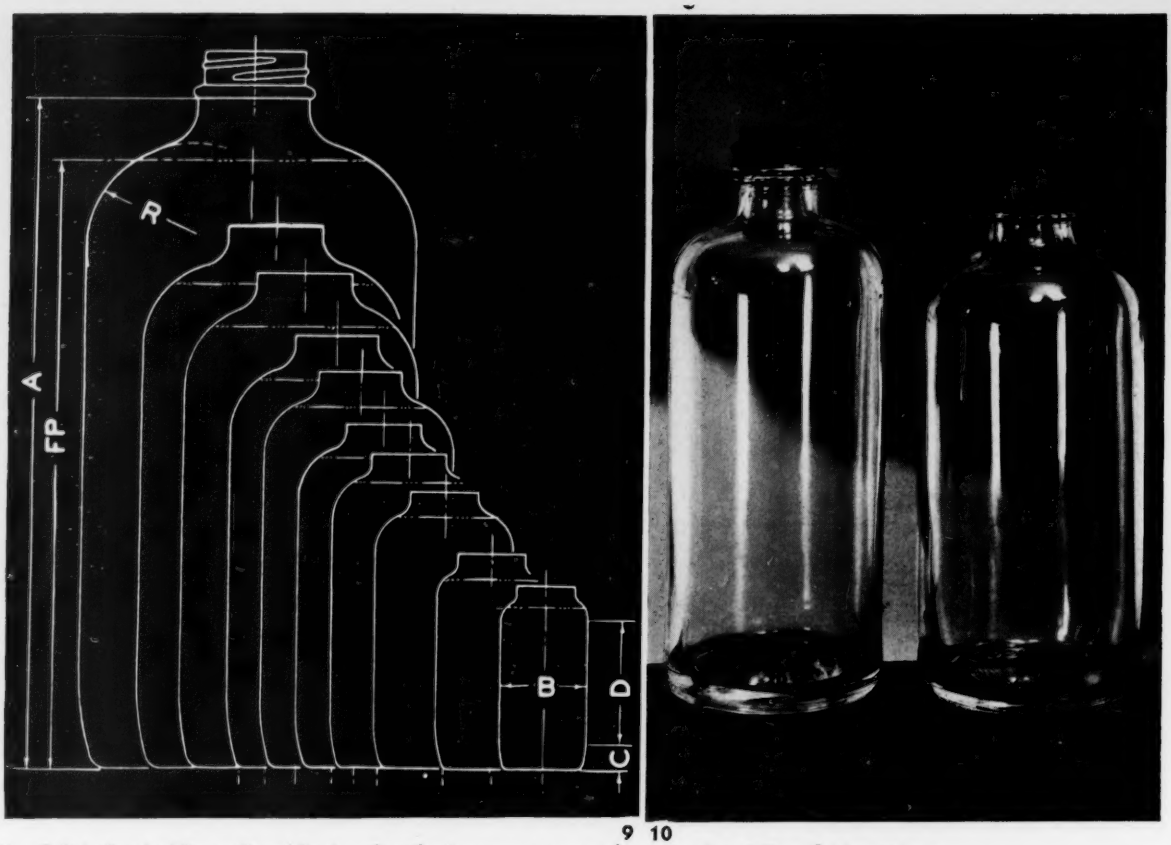
At Anchor Hocking, backing up the salesman who calls on you—is every modern facility for serving you better. Experts on every phase of packaging . . . research, engineering, designing and merchandising experts are at your beck and call. These services are yours, without the slightest obligation. Write, phone or wire.

ANCHOR HOCKING GLASS CORPORATION
Lancaster, Ohio

Closure Division: ANCHOR CAP & CLOSURE CORPORATION
Long Island City, N. Y. and Toronto, Canada



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9 10

9. G.C.A. Standard Boston Round Bottle. Specification covers a range of ten sizes, from 1/2 oz. fluid capacity to 32 oz.; also details height to closure, height to filling point, radius of shoulder curve, dimension of label space and height from table to bottom of label space, as well as finish size and cork size. Body of bottle must be of round cross section and perfectly plain. Neck sizes are nominal and subject to change to conform to standard practices of individual manufacturers. **10.** Left: Boston round bottle, 16 oz. capacity, 11 1/2 oz. weight. Right: Light weight Boston round bottle, 16 oz. capacity, 10 15/16 oz. weight.

creating the bottle. Packagers desiring to use such private molds are well advised if they consult, in advance, with their glass suppliers and maintain a very close relationship between their own designers and those of the glass company who are acquainted with the ins and outs of glass making techniques and are thus equipped to render advice which will insure a container practical to produce, to fill and to use.

While glass production equipment is able to work within amazingly wide limits of design, certain types of design are far more economical to produce and far more stronger and useful in both the factory and the home than other types. Advance consideration of these many factors, through consultation with glass suppliers, can avoid the cumulative expense and trouble involved when a less practical form of container is designed.

Standardization Programs

To a degree, the glass industry has for many years been an exponent of standardization. This has been particularly true in respect to closure finishes which are governed almost universally in the industry by standards set up by the Glass Container Assn. Thus, a manufacturer may change his source of supply of either closure or glass container with the assurance, in advance, that a specified finish on one will match a specified finish on the other within practical tolerances.

Within the last two years, however, the Glass Container Assn. has redesigned numerous types of containers along scientific lines. Bottles of types which are returned for refilling, such as beer and milk bottles, have been standardized. One-trip types have been standardized in such a way as to provide latitude for a variety of stylings and decorations. Both types have generally been designed to represent substantial improvements over previously existing varieties in many respects. The new standardized types are lighter in weight, more convenient to handle in the plant, stronger, frequently far better looking, unassailable on grounds of consumer deception and frequently are of far greater convenience in use. A number of these types are illustrated on the pages carrying this article.

Through the development of lighter weight containers, substantial savings of freight cost and warehouse space are accruing to manufacturers. Consumers are benefiting through the availability of more compact packages

MODERN BUYERS Demand Closures with A Function!

EASIER TO USE EASIER TO SELL

Have your package do an *extra* selling job! A premium of a Federal Dispenser, Server, or Sprayer made to fit *your* product alone, not only promotes the initial sale, but its convenience insures continual re-use of your product.

●

Send us your product in its present container— we'll return it to you with an appropriate Server, Sprayer or Dispenser.



Tap-a-Flow dispenser. Designed to match the black plastic closure on the Jergen's Lotion bottle.



For creating and maintaining sales, Campana's Italian Balm chose this wall dispenser.



Midway Chemical's "Aeromist" is finely sprayed through type SDS plunger.



This plunger Type RB Sprayer is used by Socony-Vacuum with their TAVERN window cleaner.



Sherfick Farms use the Deluxe No. 110 Server as "Closure Premium" for BEE HIVE Honey.



A handsome Federal Server builds sales for Maple Grove Vermont Maple Syrup.

FEDERAL TOOL CORPORATION

400 NORTH LEAVITT STREET · · ·

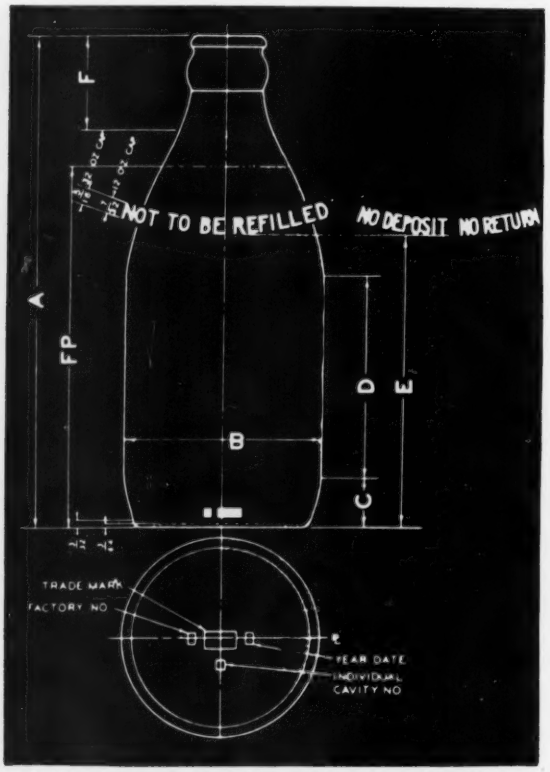
which can fit into bathroom cabinets and refrigerators. As a single example, consider the new medium high ketchup bottle which saves an average of 25 lbs. per gross in shipping weight or the standard round fruit juice bottle which saves packers and distributors above 20 per cent in warehouse space.

Great progress has already been made in the standardization program, but this program is by no means complete. New standards are issued periodically and manufacturer members of the Glass Container Assn. tool up to deliver these newer types as specifications are issued.

Glass Decorations

In recent years, new methods for decorating glass containers have been developed which have widened the usefulness of these types of packages. Certain types of decoration may be formed integrally with the container in the form of various raised or depressed surfaces, flutings and moldings. Color decoration may likewise be applied in several ways. Certain types of glass are available with integral color, such as the familiar brown bottles for beer, green glass, opal glass jars and blue glass jars and bottles.

11. G.C.A. Standard Single Trip Beer Bottle. Specification covers both 12-oz. and 32-oz. capacities. "Not to be refilled" and "No deposit, no return" lettering to appear on opposite sides. Bottom plate lettering includes trade mark and year date. Body and bottom of bottle completely stippled, as partially shown on drawing.



Cold colors, on occasion, are painted or silk-screened onto glass containers either as overall colors or to achieve desired design decorations. Finally, several methods have been brought to a high degree of perfection for the application of colors to glass (and to plastics and ceramics as well) which are fused in by firing and become a part of the package itself. Such fused-on colors may be utilized to form "labels," thus eliminating a separate applied label. They may also be used as decoration, pure and simple, as in the case of the familiar cheese tumblers where the glass container is given a high premium value, encouraging resale, through the use of fused-on decoration. The permanence of such decoration is likewise important in the reuse container field where it eliminates glued labels and the application of new ones.

Gloss colors for use over glass are a combination of a flux or low-melting glass (80–90 per cent) and a pigment or ceramic color. Most of these colors have been evolved since 1910. The first colors developed were soft and lacking in flux resistance. Only within the past five years have resistant colors been developed. The first of these were used on milk bottles and required a temperature from 1070 to 1100 deg. F. to develop gloss.

The new super-resistant colors stand up under conditions which would destroy ordinary color. They are far more resistant to sunlight, acid, vinegar, sulfides in air and food, alkaline detergents and hot water than the colors formerly available and used for glass. They are available in practically all shades in a full range of brilliant colors—red, orange, yellow, blue, green and violet. All degrees of pastel colors down to very pale tints are used in spray operations, usually to cover the entire surface of the container.

Since the color becomes virtually an integral part of the container, counterfeiting of the product when packaged in such a container is practically impossible. Duplication of the package requires specialized technique and equipment offered only through a limited number of sources. Experience shows that the percentage of returns for reuse containers is increased when fused-in "labels" are used.

In the application of ceramic colors to glass, considerable progress has been made. Machines are now in use which will band from two to eight colors simultaneously and several times faster than previously obtained by hand. Spray guns have been modified to give much greater speed, lower color loss and to do specialty designs as well as the conventional all-over spray. Silk-screen stencils, mechanically operated, have recently come into wide usage and are now employed to print from one to five colors on the glass surface.

Recent developments of at least one of the available processes include the printing of four colors in a single operation. Half tones and line drawings, it is claimed, may be accurately reproduced.

Let them tell you about CROWN CLOSURES



PLANT WORKER:
"I like them because they go on easier."

PLANT SUPERINTENDENT:
"I like them because they give us less trouble. Production is faster . . . costs are lower."







SALES MANAGER:
"I like them because they're always dependable. They keep down returns and complaints from the trade."



THE BOSS:
"I look on them as a sort of insurance for our reputation and our profits. Experience has taught me that the best closures really cost less in the long run."



THE CONSUMER:
"I like the products with caps that are easy to get off and are easy to put on again."



CCS

CROWN CORK & SEAL COMPANY
BALTIMORE, MD.
World's Largest Makers of Closures for Glass Containers

CROWN CLOSURES *cost less in the long run!*

Glass Vials, Tubes and Ampoules

by H. V. WALLACE*

Glass vials have proved to be an unusual and outstanding package for certain purposes. Packages may vary from a very crude and clumsy one, such as a crate, to a very fine and scientifically correct package. Briefly, a package should do these essential things.

(*A*) Carry the product to its destination.
(*B*) Carry desired quantity of the product.
(*C*) Preserve the product in desired state.
(*D*) In most cases, the package must be of such character that it will help to sell the product either through the appearance of the package itself or by virtue of the package facilitating visibility of the product within.
(*E*) In addition, it must also be economical to use.

Job *A* can be done by almost any package.

Job *B* is subject to many abuses. In the small package field, glass vials offer an outstanding opportunity to control the desired quantity of liquids, powders, tablets or other products which they are to contain.

Job *C* is a very important one in many fields. Glass vials protect against changing atmospheric conditions, preserving the product against contamination or evaporation. They present a neutral surface that will not contaminate the product nor be affected by the product.

Glass vials are admirably suited for job *D*. The correctly selected glass vial will be neat in appearance and will possess sales appeal. If it is desired to take full advantage of the eye appeal of the product, the clear glass walls of the vial will make such visibility possible to a degree not otherwise obtainable.

Glass vials will perform job *E* to an unusual degree. They are not only a suitable package on all counts, but they are most economical. Arriving clean and sparkling at the production line, they are easy to handle. They require minimum space and are light in weight, therefore, offer low transportation cost.

Glass vials are obtainable in a wide variety of styles. Illustration No. 2 shows the standard styles which are obtainable from stock. If a stock vial cannot be found that is suitable, it is possible to fabricate one to the desired dimensions or desired style without the cost of molds and other usual expense.

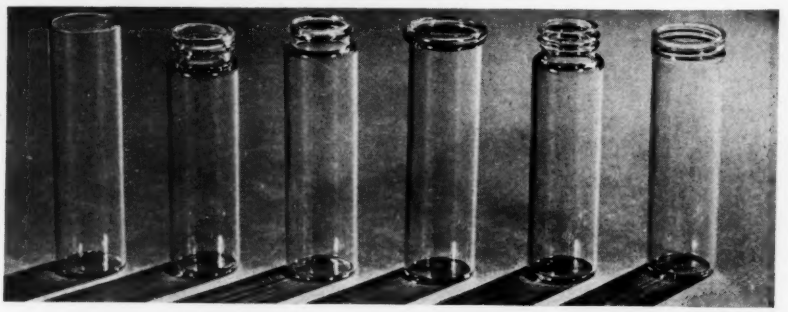
The glass vial offers interesting and exclusive characteristics for sampling. It is possible to offer even a very small sample of a product in such a manner as to present the impression of quality, dignity and care. Attention will be commanded that will influence the desire for the larger package to be purchased.

The glass vial is the ideal package for the pocket or purse. For display cards the vial is ideally suited because it is light, attractive and will disclose the contents at a glance. For candy, the vial offers complete protection from weather conditions and at the same time displays it in the most tempting manner. For sample cases, the light weight and clear visibility provided by the vial is a happy combination that is finding wide use.

* Vice President and General Sales Mgr., Kimble Glass Co.



1. Left: All of these vials are exactly alike but widely differentiated by varying types of labels and closures.



2. Right: Six different closure finishes on vials of identical size and shape. Photos courtesy Kimble Glass Co.

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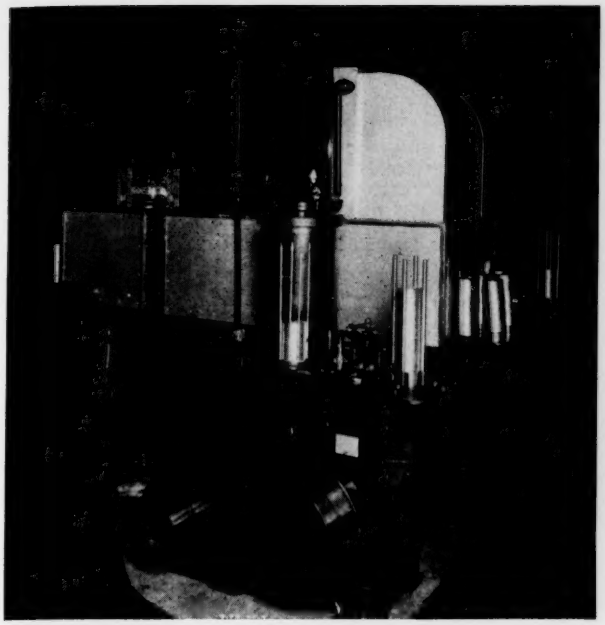


Fig. 1

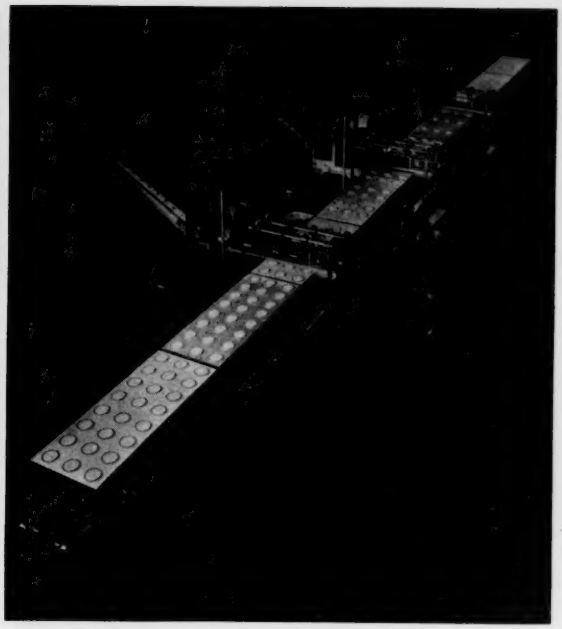


Fig. 2

Closure Sealing Compounds

by ROBERT J. GRAY *

For many years the manufacturers of tin cans have appreciated the importance of their choice of a sealing medium to make their cans airtight and to give a safe seal for the special needs of the product packed inside. As a result, much laboratory study and research has been devoted to developing the best possible compounds for the canner's needs and the way has been opened for the safe packaging of many new products. For example, twenty years ago, dry vacuum pack was impossible for want of a suitable sealing medium, yet today the development of such a sealing compound has resulted in dozens of products safely and deliciously packed, that mean new markets for tin containers.

In the same way, glass packers have come to realize that new, improved sealing compounds make possible new uses for glass containers, thus widening the market for all kinds of glass-packed goods.

For today packers know that merely a cover isn't enough: the product must have thorough-going protection against infiltration of contaminating air or moisture from without, plus quick, effortless opening for consumer convenience. And, while old-fashioned sealing methods may be physically adequate for some products, under the high competition of modern merchandising, that product sells best which comes to the consumer in the freshest and cleanest condition—the result of a modern seal.

That is why glass packers and closure manufacturers are keenly interested in the results of the research laboratories devoted to sealing compound research for new developments that will permit them to open new markets for their containers.

The last few years have seen a great improvement in automatic machines for applying the type of gasket that is poured into the cover groove in liquid form and dried in place to form an integral part of the cap. Naturally, this improvement in the machines for applying this type of gasket has resulted in a great trend toward the "flowed-in" gasket for all types of closures.

In the home-canning field, for instance, the old-fashioned Mason top with cut rubber ring is being rapidly supplanted by the new two-piece disc caps with the sealing compound integral with the closure. These modern gaskets not only age better and give a safer, more lasting seal, but, being a smooth part of the cap, they eliminate the danger of bits of food getting between the disc and the ring or between the disc and the top of the cap.

Another trend in modern packaging is bringing the advantages of a "flowed-in" gasket to wide-opening tin

* Advertising Manager, Dewey and Almy Chemical Co.

containers that formerly depended on "friction" or "snap" covers. Today the advanced technology of the compound manufacturers enables them to provide a can manufacturer with a compound that will give the same vacuum-tight seal to the wide-mouthed tin container that was formerly believed possible only with a regular packer's can. These new cans, which are coming out in increasing numbers, depend exclusively for their safety on the correct "flowed-in" gasket placed in exactly the position in the closure that will give best results. As a result, they give a better package that is opening new markets and fitting into the trend for more and more packaged merchandise.

The same swing toward the "flowed-in" closure has become of even greater importance in the larger metal containers: five-gallon pails, grease drums, and the regulation 55-gallon drums. Here it is definitely replacing all other kinds of sealing "mixtures," principally because it gives a soft, resilient gasket that seals tighter and won't stain or contaminate products of delicate color or taste. In addition, it can be put exactly where desired in the seam so that it doesn't come into direct contact with the oils or solvents packed inside. This non-contaminating feature is especially important with a product like alcohol, which, for some uses, must be protected against even the slightest suspicion of taint.

This new sealing medium has greatly increased the usefulness of the five-gallon steel pail, which is becoming more and more popular as an institutional package and for products like the syrups used in the preparation of carbonated beverages. It is also interesting to note the trend toward a pail cover with a "flowed-in" gasket which is being used in place of the conventional friction plugs in grease drums.

With the wide variety of products and packages in common use today, it is evident that sealing has become a highly specialized field, which demands expert scientific knowledge and equipment and constant research to offer new closures and packages that will whet consumer demand and build sales for packaged merchandise. As a result, laboratory work and field testing is going on without any slackening, attempting to find better ways of protecting sensitive products and of bringing the consumer the full freshness and goodness of the material so attractively presented that he can't resist its intrinsic sales appeal.

Fig. 3

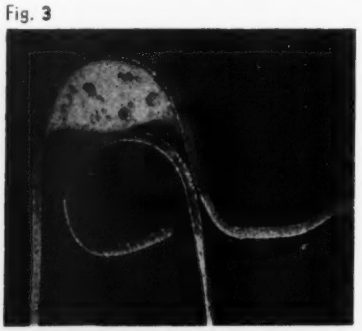


Fig. 4



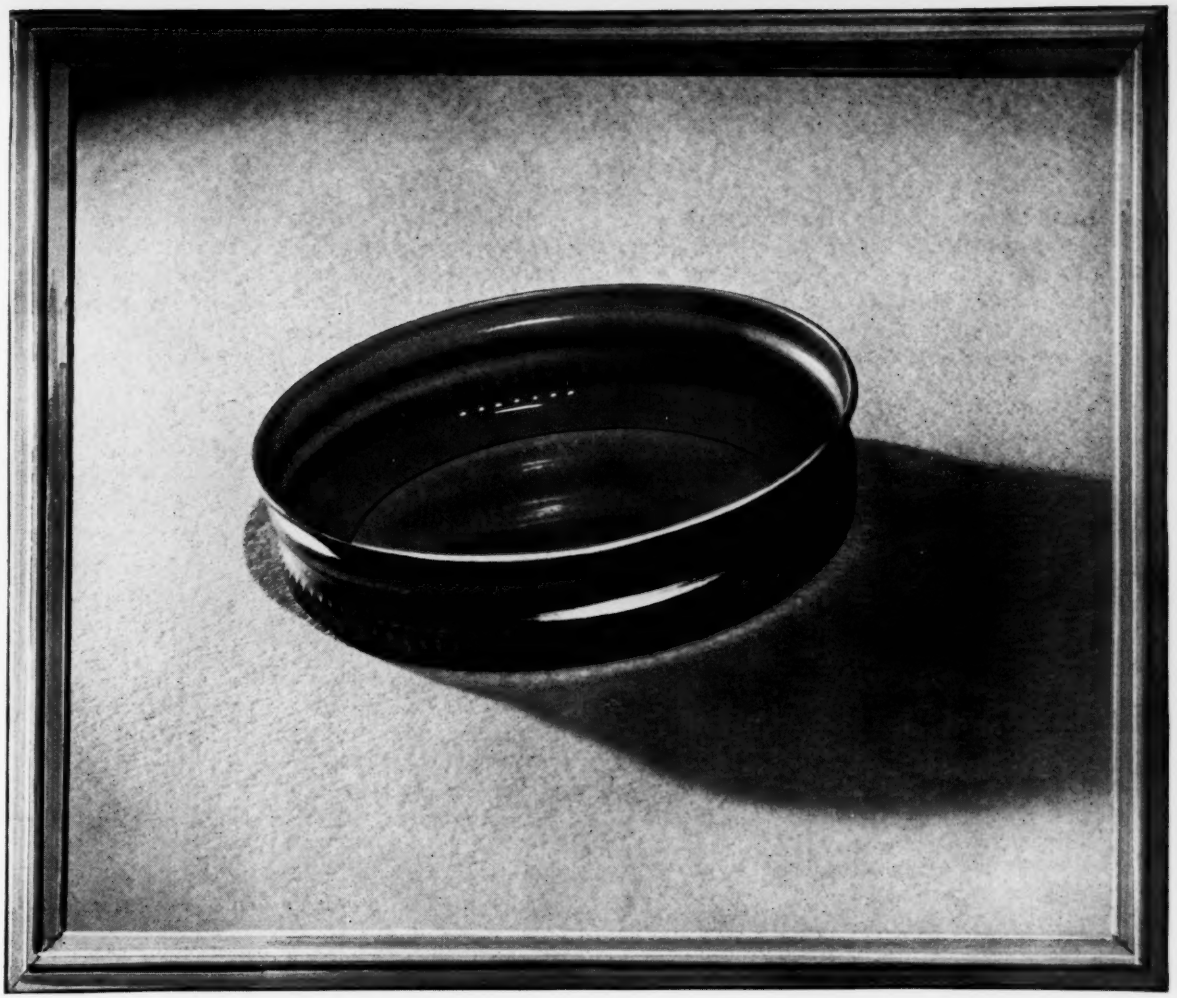
Among these heavier gaskets for glass, there are two major types. First, there are those made from vulcanized rubber, like the rubber rings your mother used to use in home canning. These require extreme care in cutting to keep them uniformly level and must be more or less mechanically held in place in the cap before use. Today the "flowed-in" type of gasket is coming more and more into use. The cap manufacturer applies the gasket in liquid form directly to the cap groove, where it is dried in place to give a single, uniform sealing surface. Modern equipment is now available which makes it possible to apply the compound to the caps efficiently and economically at volume production speeds. A typical machine is illustrated in Fig. 1. A carefully controlled liquid virgin latex, compounded with suitable inert filler materials, is forced in accurately measured quantities into the cap as it is rotated under the nozzle and the closure is then passed through drying ovens which evaporate the liquids and leave the firm resilient gasket as an integral part of the cap.

The liquid latices, carefully compounded for proper lineability, viscosity and solids content, are flowed from the nozzle of the machine directly into the cap groove. By changing the angle of the nozzle, it is possible to place the film exactly where it is desired in the cap. Since it is one of the laws of a liquid that it "seeks its own level," the packer is assured of a perfectly smooth, even gasket.

For five-gallon pails and steel drums, the gasket is "flowed" into the cover groove in exactly the same way, but here still another gasket material is necessary. For this use, the latices to be flowed into the cover are specially compounded to supply the greater bulk required by the volume of the cover groove and also to give a soft, resilient and sponge-like gasket that will deform to make a tight, safe seal when the cover is crimped onto the pail. (Figs. 3 and 4.)

Just recently a new coin-opening container for vacuum packing in tin has been introduced which makes use of the glass closure type of "flowed-in" gasket in a slip cover. It has already been adopted for modern vacuum packing of such diverse products as typewriter ribbons, lozenges, cough drops and tobacco, as well as dry foodstuffs. And, because it offers a logical, economical and efficient vacuum package for such a wide variety of products, it is marked by sales-alert packers as a highly important forward step in the packaging field.

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Portrait of a Sales Tool

Meet your cap—your customer's first contact with your product. Does it fulfill its function as a "greeter," open so easily that her first enthusiasm isn't spoiled by an irritating struggle to get at the contents?

"Flowed-In" Gaskets ★ are built with a patented "Slip-O" film to give the effortless opening that good salesmanship (and customer insistence) demands. Yet the soft, resilient latex makes a seal that's vacuum-tight to preserve fresh flavor and eye-appeal.

It's an extra sales help that's yours for the asking. Why not check with your cap manufacturer today?

★ *Cap manufacturers like their easy, economical application—actually flowed in in liquid form to give a gasket that's integral with the cap.*

DEWEY AND ALMY CHEMICAL COMPANY
CAMBRIDGE . OAKLAND . MONTREAL

GOLD SEAL CAP COMPOUND

Primary and Secondary Closures

Closure performance determines, to a large degree, the success of a glass container. It is the consumer's means of access to the product, and the manufacturer's assurance that the quality he packaged at his factory is still intact. Hence, in determining the selection of closures for his packages, the product manufacturer will be guided by replies to the following questions: Is the closure easy to remove? What is the condition of the product—does the closure keep it in factory-fresh condition? Is the closure easily replaced—does it provide a convenient and efficacious re-seal for the package, if such is needed? Does the seal protect the product against tampering?

The most reliable method of selecting a closure is to choose one, within the proper price range, that can be depended upon to provide the utmost in package attractiveness, secureness of seal, and convenience of use for each specific product. The ingredients of the product and the market in which it sells will, to some extent, determine the type of closure to be used. Therefore, it behooves every manufacturer who is engaged in the packaging of a product that requires sealing in a bottle, jar or can to carefully study, test, and compare the seals and methods before adopting any, remembering that the sealing material—cork, metal, lacquer, liners or sealing gaskets, glassware—as well as the product to be sealed must be given full consideration.

Glass, with its sanitary qualities, transparency, and pleasing effects, early took its natural leadership in a great many lines, but probably even today only about 30 per cent of those products which could be glass-packed are shipped in glass. This is due to the fact that usually the use of the glass container makes the package a quality item slightly more expensive than most of the other types of containers now available.

Because of its efficient sealing qualities, as well as modern manufacturing innovations in shaping cork into many practical forms, cork remains one of the popular and dependable present-day closure materials. Chief among the sealing properties of cork are its resilience, compressibility, resistance to the penetration of liquids, and its chemical inertness. With the exception of alkalis and strong solutions of certain acids, corks will provide efficient seals for almost any type of product.

Components of Closures

The elements included in a closure (other than that provided by a cork) are the following:

1. The cap itself, which consists of a shape or form made of tin-plate, plastic compound, aluminum, brass, paper, gelatin, celulose, tin or aluminum foil.

2. The liner or gasket, which provides the sealing medium, may be either a rubber compound gasket for hermetic sealing or a combination disc insert liner for products not requiring an hermetic seal. The combination disc insert liner usually consists of two parts—the outer facing, chemically inert to the action of the product, and a backing material.

3. The thread or lug construction of the cap by means of which it engages threads or lugs on the glass container.

4. The decoration, by which the packer or manufacturer is enabled to:

(a) Dress up and give his packages individuality, distinctiveness, eye-appeal, and added color.
(b) Advertise and emphasize his trade-name or mark, his organization, a group of products, the general quality of his products, a trade character or a slogan.
(c) To properly instruct the user on the storage of the product, its preparation, use, service, and directions for opening, etc.
(d) Encourage the wider use of the product through recipes and new uses.
(e) Cross-advertise and encourage the use of other products which he produces.
(f) Permanently identify powerful or poisonous drugs in case the paper label should become soiled, torn, or lost.
(g) Identify certain ingredients to be mixed with others.
(h) Offset the need and expense of labels, or to otherwise replace them where the size or shape of the containers, or the method of storing or handling them, prohibits the use of labels.

General Classification of Closures

Closures may be divided into the following general classifications: Single-seal closures, re-seal closures, special closures, and secondary closures.

Single-seal closures for glass containers are those primarily intended to protect and enclose the product in its container until it reaches the consumer—in effect, a "single seal" is accomplished. Once opened, however, the value of the closure is not destroyed for the cap can be used, in most instances, as a protection against dirt, dust or other contamination.

Used only on tin containers are several types of single and re-seal closures, such as screw-caps, friction-tops, locked-slip and draw-slip covers, as well as those seals which are reamed or clamped on.

Re-seal closures are usually of the C. T. (continuous thread), interrupted thread, lug, friction, or pressure types. As indicated by their designation, they are used where a secure re-seal is desired, although after they are

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once opened there is no protection of the product from atmospheric effects.

Secondary closures are those which are used to supplement other closures, either to obtain additional protection for the product or for decorative purposes. These may be variously classified as cellulose and gelatin caps, film seals, and foil hoods. Cellulose and gelatin caps are supplied by the makers in dry form or immersed in a solution which enables them to be stretched by hand over the primary closure. In drying, these shrink and thus provide a decorative cover over the seal and also help to make the seal more air-tight. Obtainable in colors and in special designs with lettering or trademarks, these closures are of further help in creating individuality for the package. Film seals are placed directly over the openings of bottles or cans and, in the conjunction with the main closure, also aid in effecting a seal. Foil hoods or caps, most frequently used on wine-bottles, are placed over the tops and extend part way down the necks of the bottles, usually being squeezed on to assure adhesion.

Under *special closures* may be listed a great number of designs, patented and otherwise, which serve particular purposes in convenience and protectability. During the last few years many special closures have been developed for use in the liquor field, such as tamper-proof, pouring, and measuring caps. Likewise, in the food and drug fields there have been many modifications of standard-type caps which permit greater convenience to the consumer of the packaged products.

Single-seal Closures

Single-seal closures are usually constructed of a single piece of metal, principally tin-plate, although aluminum is used for some. All, with the exception of Nos. 1, 3 and 16, use rubber sealing-gaskets to effect their seal. Some of these caps make their seal on the side of the container finish, others are known as top-seal caps and make their seal on the top of the finish. Certain single-seal closures, of course, permit re-use as cover-caps although where these are vacuum-sealed the original purpose is destroyed once the cap or closure is removed.



1. Upper left: Alseco foil tumbler cap. Crimped on. Also available in sifter (perforated) type. **2.** Upper center and right: Vacuum caps with tear-off tabs. Top seal; two tabs may be provided. Aluminum or tin. **3.** Bottom: Goldy seals. Tear-off: aluminum. Top seal.



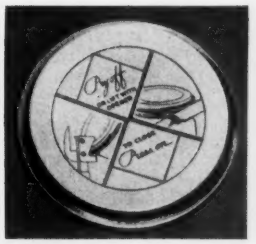
4. Top seal for thin tumblers. Vacuum. Whitecap.



5. Anchor T cap. Side seal; air-tight or vacuum. For thin-blown and thin-pressed tumblers.



6. Anchor D cap. Side seal; air-tight or vacuum. For jars, bottles and tumblers.



7. Anchor F cap. Side seal; pry off. Air-tight or vacuum. For jars, bottles and tumblers.



8. Anchor K cap. Side seal; pry off. More easily removable than No. 7.



9. Anchor Pilot cap. Side seal; pry off. Vacuum.



10. Saniseal cap. A tin-plate crown cap, lined with waterproof paper for demijohns and unlined for milk bottles.



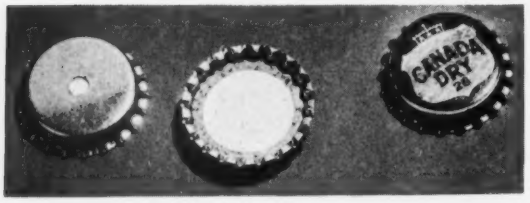
11. Seal-Kap sanitary re-seal cover for milk bottles and jars. Made of specially treated paper, plain or in colors and decorated.



12. Left: Whitecap vacuum side seal for pry-off finish. **13.** Right: Whitecap vacuum deep top seal for pry-off finish.



14. Left: Whitecap double-shell vacuum cap. **15.** Right: Band cap, two-piece vacuum.



16. Crown caps, designed primarily for sealing carbonated beverages and bottled and canned beer. Use liners of various types. Perforated top shown used for bluing, etc.



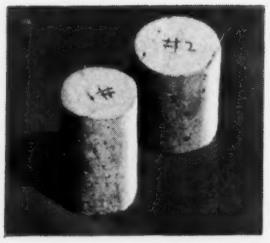
Photo courtesy Crown Cork and Seal Co.

17. Dacro cap for milk bottles. Photo courtesy Crown Cork and Seal Co.

Corks—Standard Types



18. Champagne cork. For use with various types of champagne of foreign or domestic vintage. Made from selected and tested corkwood in two types, for first and final bottling.



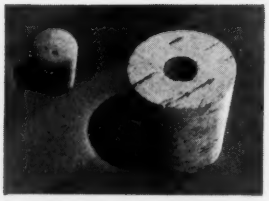
19. Left: Straight cork. For use in sealing still wines (dry and sweet). Oversize, and driven under compression into bottle. **20.** Right: Tap cork. Inserted in bushes in heads of kegs in cooperage factories or breweries.



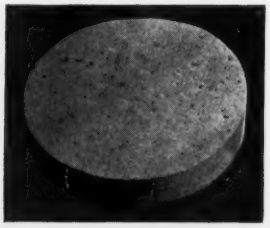
21. Tapered cork. General-use closure for bottles, jugs, flasks, etc. Manufactured in a wide range of grades, tapers and sizes.



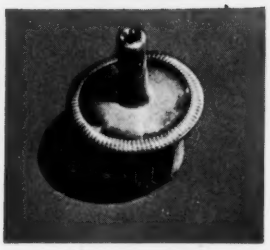
22. Wedge-top cork. Ordinary tapered cork with formed top. Essentially a perfume or cosmetic container closure.



23. Left: Round-top cork. Variation in shape of No. 22, with same uses. **24.** Right: Shell cork. Used with glass or fancy stoppers, with sprinkler tops and as orifice reducers.



25. Specie cork. Pores of corkwood run from top to bottom instead of through the diameter. For sealing laboratory glassware, certain dry chemicals and for mustard, horseradish, etc.



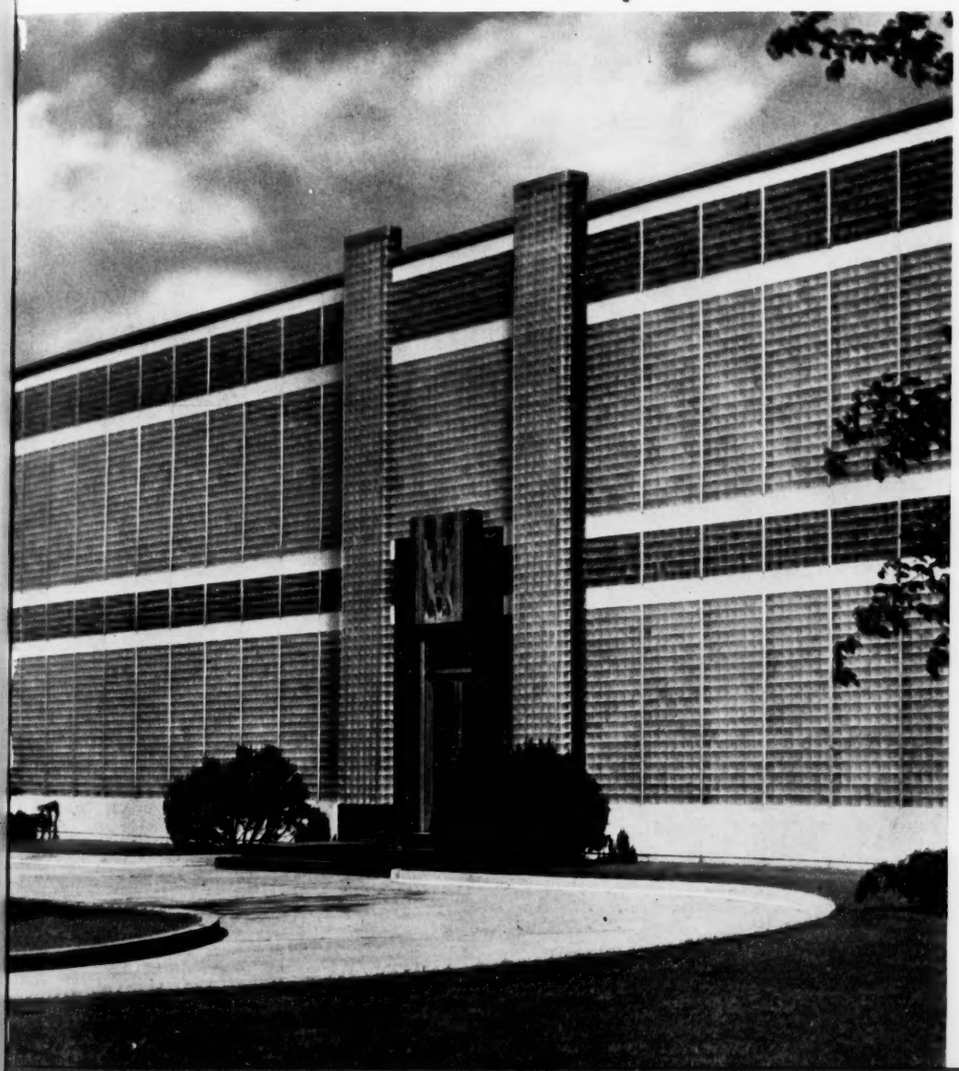
26. Sprinkler cork. Metal sprinkler inserted in shell cork. Used for dispensing liquids.

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BASED ON RESEARCH, EXPERIENCE AND TECHNICAL SKILL

... designed to help you Sell

It's better in Glass



The modern GLASS package has no equal as a powerful aid in selling. Glass bespeaks quality. Glass is a showcase for your product, lets customers see what they buy. Glass is convenient to handle. Glass safeguards product quality. Glass gets better display.

Give your product the sales advantages of glass by bringing your complete packaging problem to Owens-Illinois.

Our Packaging Research Division will help you in choosing the right container and closure, in designing a label and shipping carton. It can aid you in solving any processing or shipping problem.

Call an Owens-Illinois representative. You will find him a well-informed counselor on your packaging needs.

AT LEFT — The modern laboratory of the Packaging Research Division, daylighted with wall panels of Owens-Illinois Insulux Glass Block.

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GLASS COMPANY

First in Glass

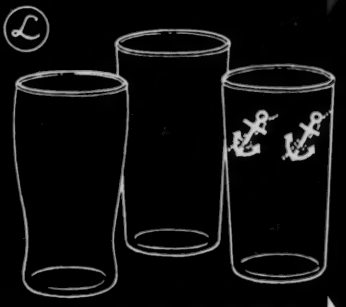
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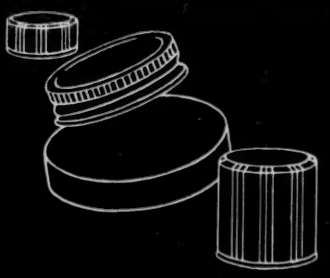
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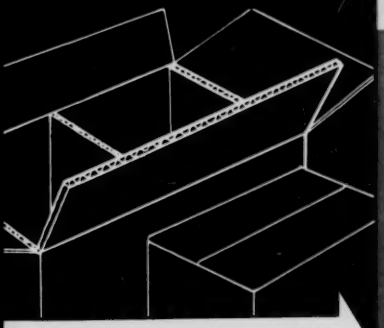


GLASS CONTAINERS



SAFEDGE TUMBLERS





SHIPPING CARTONS

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FOOD

Glass containers for every food product. New lightweight jars for vegetables and fruits. No. 10 jars and bottles for bulk foods and juices. O-I Oval and Modernistic jars for a wide variety of products. Every popular shape in bottles for juices, vinegar, catsup, oils. Perma-Fresh vacuum coffee jars.

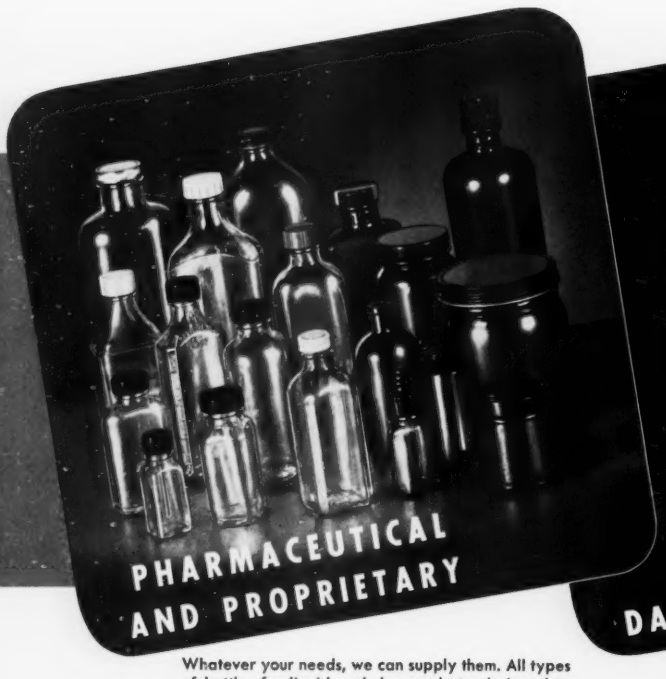


COSMETICS AND TOILETRIES

Give your products real eye-appeal with a smart O-I container. A wide variety of stock shapes for hair tonic, shampoo, lotion, perfume and toilet water, brilliantine, nail polish, bay rum. If you want a distinctive shape of your own, we will help you design it. Owens-Illinois closures complete the package.

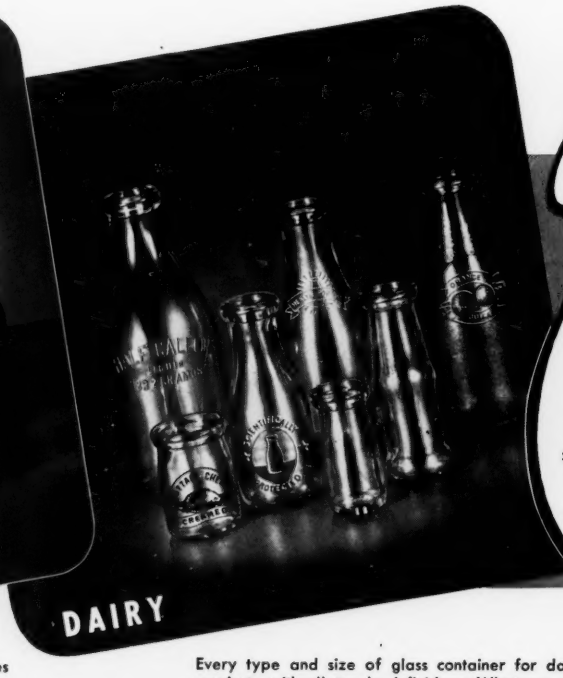
"First in Glass" is the result of continual pioneer

lighter in weight, stronger, more convenient to use, m



PHARMACEUTICAL AND PROPRIETARY

Whatever your needs, we can supply them. All types of bottles for liquid and dry products, designed to meet the exact needs of the industry. The most complete line of Prescription Ware made—ovals in all sizes, powder and ointment jars, capsule and tablet vials, dropper services, etc.



DAIRY

Every type and size of glass container for dairy products, with all standard finishes. Whatever you need, we can supply it—table creamers, large milk jugs, cottage cheese and sour cream jars, orange juice and chocolate drink bottles. ACL gives your containers extra merchandising value.

Applied Color Lette

Owens-Illinois Applied Co
ing makes your label, trad
sales message part of the co
ACL designs, applied as ceram
ors, are fused into the glass at
temperature. Colorful ACL deco
tion increases the eye-appeal of yo
container . . . gives better display i
stores . . . helps sell your product.

ACL



GENERAL PURPOSE

There is an Owens-Illinois Salespackage for almost every kind of product. We supply a wide range of sizes and shapes in bottles and jars for cleaning fluids, ammonia, polishes, wax, oils, paints, dry and liquid chemicals, disinfectants, insecticides. We will be glad to design a special container for your product.



BEER AND ALE

Owens-Illinois bottles are famous for Unequalled Strength, unvarying quality and uniformity of finish. Bottles in all standard colors and shapes in all sizes. Applied Color Lettering, fused into the glass, gives you labels that step up eye-appeal, eliminates labeling.

pioneering by OWENS-ILLINOIS in making Glass Containers

o use, more appealing to the eye... better *Salespackages*

Applied
olor Lettering

ens-Illinois Applied Color Letter-
akes your label, trademark or
nessage part of the container.
igns, applied as ceramic col-
fused into the glass at high
re. Colorful ACL decora-
s the eye-appeal of your
gives better display in
lps sell your product.

ACL



BEVERAGES

A complete line of beverage bottles in a wide variety of shapes and all sizes. All standard glass colors. Our designers can originate an unusual, eye-catching bottle for you. Colorful, long-lasting ACL designs, fused into the glass, give your bottles merchandising value.



WINES AND LIQUORS

The widest variety of liquor and wine bottles. Plain liquor bottles in quart, fifth and pint sizes. Correct shapes in bottles for port, sherry, claret, burgundy, sauterne, champagne, etc. Handsome decorated gallon and half-gallon wine jugs. Scores of stock shapes that make replacements easy and economical.

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Complete Packaging Service includes:

Safedge TUMBLERS



O-I CLOSURES



SHIPPING CARTONS



SAFEDGE TUMBLERS, used as product containers or premiums, give you a powerful added selling force. The famous Safedge rim is guaranteed against chipping. Tumblers in standard sizes are colorfully decorated with Pinocchio and other Disney characters... artistic designs... or your own special decoration.

OWENS-ILLINOIS CLOSURES, metal and molded, meet every requirement: 1. They help consumers use your product with convenience. 2. They provide sure seal and reseal. 3. They add to the attractiveness of your package. Use Owens-Illinois Closures ... tops in quality.

SHIPPING CARTONS. We manufacture all styles and sizes of corrugated cartons, printed or plain. Filling your shipping requirements is another step in O-I service, providing one source of supply to give consideration to every phase of your packaging problems and synchronize your incoming deliveries.

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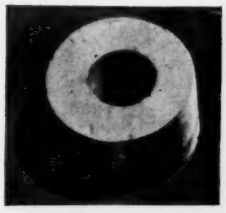
27, 28, 29. Topped corks are of three types and are widely used for sealing liquors, perfumes, essential oils, lotions, extracts, etc. No. 27 (left) shows molded plastic top attached to accurately cut cork; No. 28 (center), lithographed metal top cork; and No. 29 (right), embossed wood top cork.



30. Flange cork. Flange facilitates removal of closure from bottle. For whiskey containers and for use with various types of tamperproof outer seals.



31, 32. Dauber and applicator, respectively. Works with wooden tops.



33. Orifice reducer. Shell cork which may be equipped with metal fitting and used to convert standard cork finish or screw finish into shaker type units for dispensing. Of particular value and use to manufacturers who do not have special vacuum filling equipment. No special equipment is necessary to apply orifice reducers to bottles.



34. Rubber cork or stopper. Used for bottles containing ammonia, certain chemicals, etc.

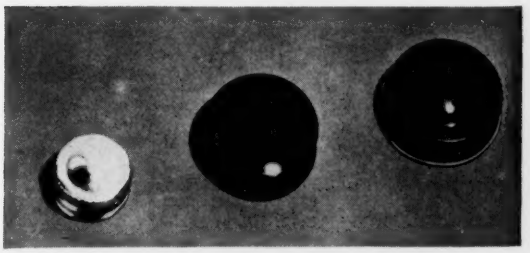
Re-seal Closures—Single Shell

These are of the single shell, continuous thread (C. T.), screw type. Made of tin-plate; some of aluminum. May be lithographed, embossed, or perforated.

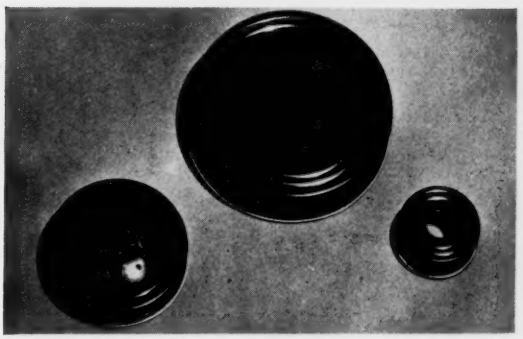
As with the single-seal closures, re-seal caps are provided with liners made of selected materials to meet given conditions. In the wide-mouth sizes, re-seal caps are used to seal such products as foods, candy, cosmetics, creams, ointments, etc. In the narrow-mouth sizes they are extensively used for food products, pharmaceuticals, wines, liquors, cordials, drugs, cosmetics, glues, cleaning fluids, shampoos, pastes, shoe polishes, mineral and vegetable oils, etc.



35. Upper left: Flat top, rolled edge, no knurl. **36.** Upper right: Flat top, rolled edge, with knurl. **37.** Below, left: Full dome top, rolled edge, no knurl. **38.** Below, right: Flat top, no ring, no knurl.

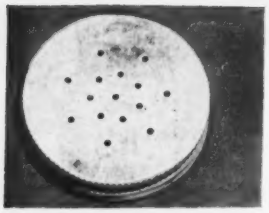


39. Left: Part dome top, raw edge, with semi-knurl. **40.** Center: Full dome top, no knurl. **41.** Right: Standard dome, no knurl.



42. Left: Perforated top (partial dome), rolled edge, no knurl. **43.** Center: Flat top, rolled edge, with knurl, depressed ring. **44.** Right: Single perforation top, rolled edge, with knurl, depressed ring.

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45. Perforated top (flat), rolled edge, with knurl.



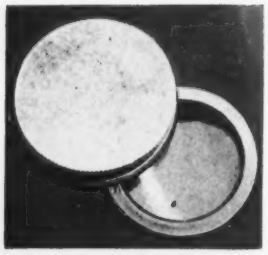
46. Flat top, rolled edge, with knurl, depressed ring, gasket lined. Illustration shows under side to indicate placing of gasket.



47. Partial dome top, rolled edge, with knurl, decorated.



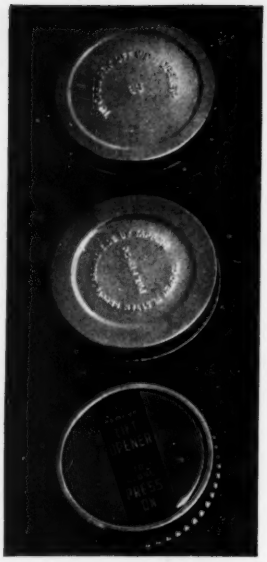
48. Unishell in which screw thread is formed from curled-under edge so that the peripheral side is flat. Decorated.



49. Two-piece single shell. The top fits over a metal disk, on which is vulcanized the sealing gasket.

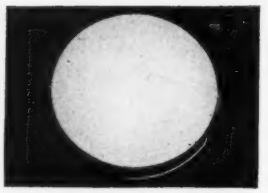


50. Roll on. An aluminum screw cap, the threads of which are formed on the container.

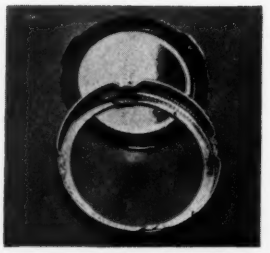


Single-shell, re-seal caps, are also made in friction and lug types. In the latter case, the lugs are formed integral with the shell itself. Both types may be lithographed in plain colors or decorated.

51. Top: Anchor A Clipper. Pry-off friction cap. **52.** Center: Anchor R Clipper. Corrugated skirt, friction cap. Opened by flattening groove around side by tapping. **53.** Bottom: Anchor Halyard. Air-tight or vacuum seal. Removed with a lift opener (wire) integral with the container.



54. Anchor Amerseal. Lug cap with knurl. With flat, domed or perforated top.



55. Two-piece Amerseal, air-tight or vacuum seal.



56. Top: Uniplex. Single-shell, lug cap with flat peripheral side. Under and top views. **57.** Bottom: Duplex. Single-shell, lug cap with flat peripheral side. Decorated. Top and under views.

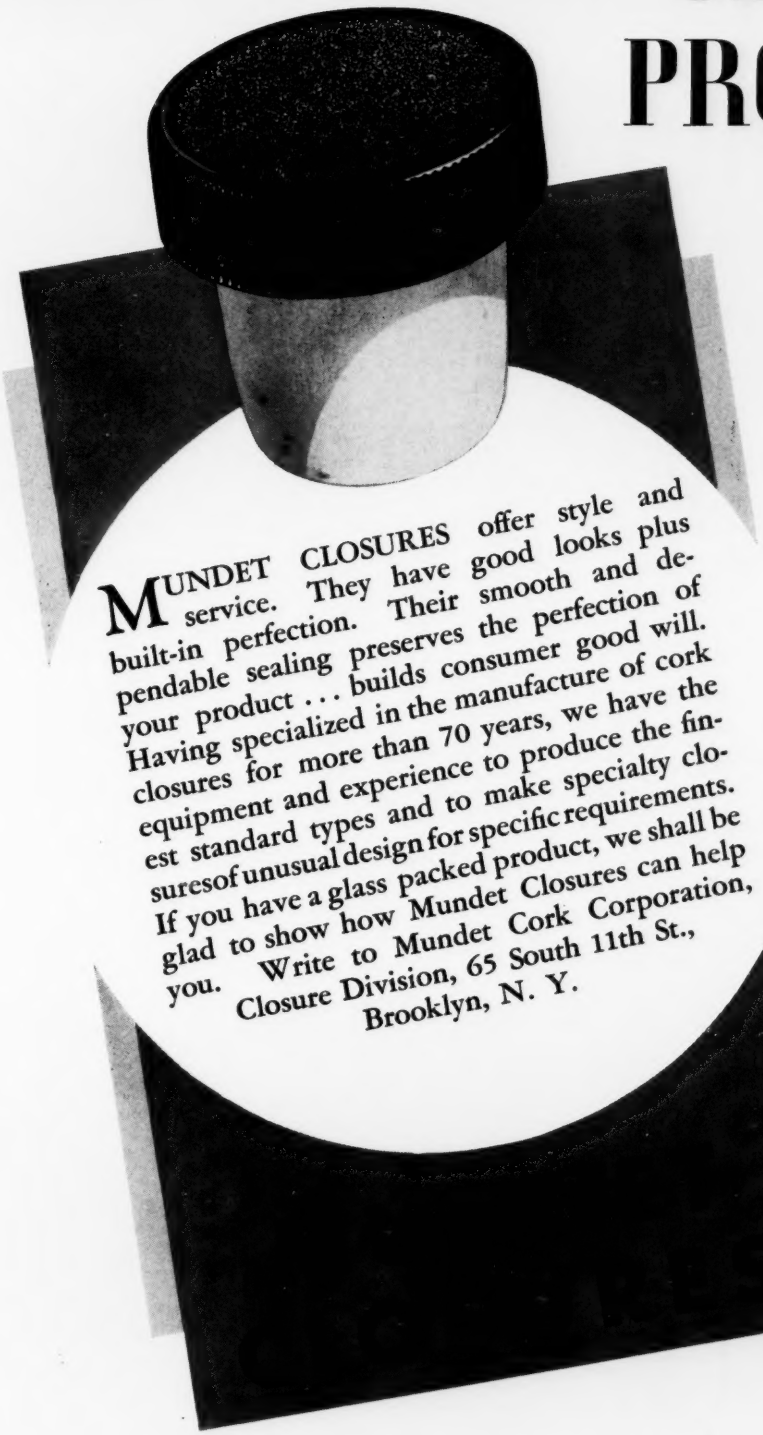


58. Gasket lined Amerseal, airtight or vacuum seal.



59. Anchor Beacon. Lug cap with flat peripheral side. This illustration shows under view, revealing liner.

SOLUTIONS TO YOUR CLOSURE PROBLEMS



MUNDET CLOSURES offer style and service. They have good looks plus built-in perfection. Their smooth and dependable sealing preserves the perfection of your product . . . builds consumer good will. Having specialized in the manufacture of cork closures for more than 70 years, we have the equipment and experience to produce the finest standard types and to make specialty closuresof unusual design for specific requirements. If you have a glass packed product, we shall be glad to show how Mundet Closures can help you. Write to Mundet Cork Corporation, Closure Division, 65 South 11th St., Brooklyn, N. Y.



Molded Screw Caps



Embossed Wood Top Corks



Molded Flange Corks



Corks of All Types

Mundet Cork Closures include many special kinds designed to fill individual requirements of drug and cosmetic products, of wines and champagnes, liquors, etc.

Mundet District Offices Are Conveniently Located for Prompt Service

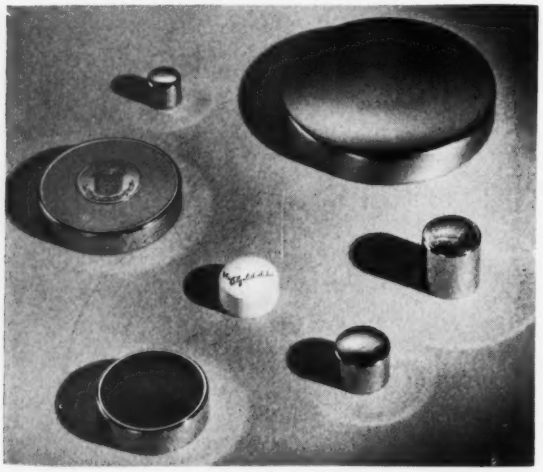
Atlanta.....339-41 Elizabeth St., N. E.	Detroit.....335 W. Jefferson Ave.	New Orleans.....432 N. Peters St
Chicago.....2959 N. Paulina St.	Houston.....Commerce and Palmer Sts.	Philadelphia.....2226 Arch St.
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Cleveland.....Britten Terminal, Inc.	Los Angeles.....1850 N. Main St.	also J. C. Millett Co.
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Denver.....The Stone-Hall Co.	Memphis.....Memphis Bonded Warehouse	Seattle.....Succop-Tighe & Sons.

In Canada: Mundet Cork & Insulation Ltd., 35 Booth Ave., Toronto

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60. Sentry seal. Shown assembled and apart. Made of tinplate. A single shell, re-seal C. T. screw cap surrounded by a notched tab band. Band is broken by a pull on the tab.



61. Decoratively finished, close-fitting single shell closures with locking members concealed on the inside surface and invisible from the outside. The locking members are formed by shearing down and rolling a section of the metal shell wall. Available for either continuous or intermittent type threads. Photo courtesy Scovill Manufacturing Co.



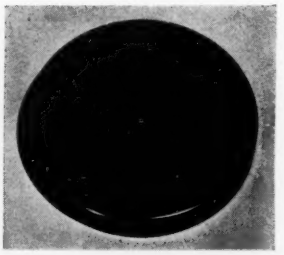
62. V. P. O. (vacuum pry-off) cap. Vacuum top seal for pry-off finish. Indentations in the side of the cap also provide a mechanical lock to hold it firmly in place, thus making an air-tight and water-tight re-seal. Photo courtesy Crown Cork and Seal Co.



63. Screw and lug caps lined with patented slip rubber ring vulcanized into the caps. For vacuum seal and hermetic re-seal. Photo courtesy Crown Cork and Seal Co.

Re-Seal Closures—Double Shell

Illustrations on this and the next page, with the exception of No. 74, show general and special types of double-shell caps. These are constructed with inner and outer shells tightly locked so that they have ample strength to withstand capping pressure. In double-shell screw caps the inner shell incorporates the screw-thread, while the outer shell serves as a cover to the inner shell and presents side surfaces that may be smooth or indented, as desired, but free from the thread configuration of the average single-shell cap. This feature is particularly desirable in certain packages where straight lines or uninterrupted surfaces are wanted for design purposes. Double-shell caps are available in a complete range of standard sizes. A continuous screw-thread is generally used, although there are several types of double-shell caps provided with a form of interrupted thread.



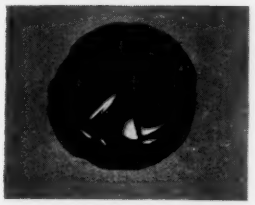
64. Standard flat top, large size, double shell cap.



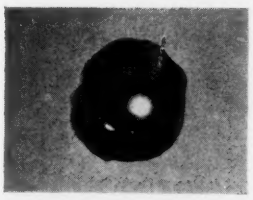
65. Left: Standard flat top, small size, double-shell cap, showing under view with liner. **66.** Center: Upper view of cap No. 65. **67.** Right: Dome top, lithographed with trade name of product.



68. Dome top, with grooved side to facilitate opening of jar.



69. Dome top, with indented decorations.



70. Dome top, with variable indentations which define a square. Generally referred to as a "square top."



71. Double-shell cap of burnished brass. This has an extension dome top. Upper and under views are shown.



72. Double-shell cap of gold-wash brass, upper and under views are shown. This has a dome top and long skirt.



73. Kep-Ark Autochrome cap. Inner shell is replaced with an expansion type ring which locks liner into cap and adjusts threads to cap variations.

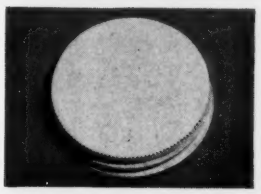


74. Left: Amerseal Nozzle and Beacon cap. A special nozzle or pouring neck combined with a single-shell lug cap. Component parts are detachable. Right: Amerseal Nozzle and Amerseal.



75. Gripseal cap. A double-shell re-seal screw cap, dome shaped, with special indentations for easy removal.

Re-Seal—Special Types



76. Deep screw cap.



77. Gasket lined deep screw cap.



78. Two-piece deep screw cap.



79. Ash tray top. Domed, single-shell, continuous thread cap, fitted with a hinged disk that permits tipping. Three grooves provided for placement of cigarettes



80. Knife - opening cap. Deep-screw single-shell cap with special top that permits insertion of a table knife for opening.

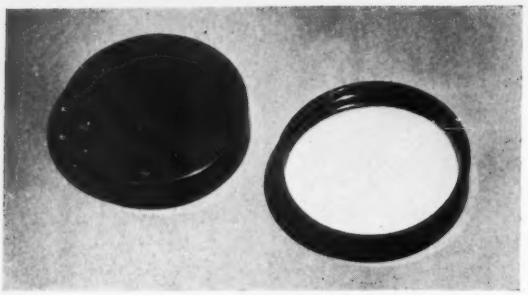


81. Tip-off. For sealing quart bottles containing distilled spirits.

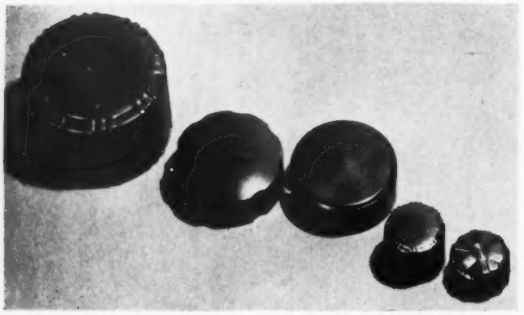


82. Seal spout. An aluminum pouring spout. Made in a variety of sizes and shapes and applicable to cartons and fibre cans.

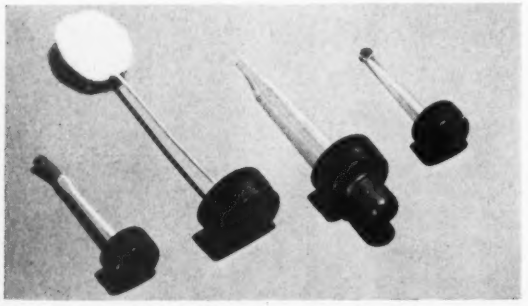
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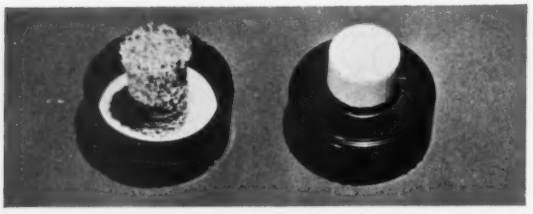
83. Flat top molded cap for jars.



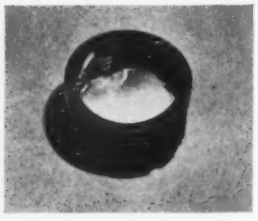
84. Various types of standard design molded bottle caps.



85. Molded caps with brush, dauber, dropper and applicator attachments.



86. Left: Molded cap with sponge applicator. **87.** Right: Molded sprinkler cap with screw top.



88. Anchor Trident cap, under view. Three interior lugs of special construction provide the means for effecting the closure. Used for bar bottles.

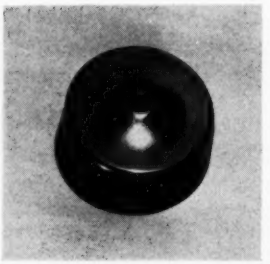
Molded Caps

Caps of molded phenol formaldehyde (Bakelite, Durez, Resinox, etc.) and, to a lesser degree, of urea formaldehyde (Plaskon, Beetle) are used extensively and have distinct advantages. They maintain a permanent lustrous finish and are manufactured in a variety of standard designs and sizes for general use with screw-finish containers for nearly every type of product packaged in glass. They are available in a wide range of standard colors or they may be specially molded with any trade mark or design, or in any shape desired. As in the case of metal caps, the liner is a most important factor in the sealing security of the molded cap. Consequently, care must be taken to assure the correct liner if the product is to be securely sealed, and the possibility of reactions between the liner and the product eliminated.

A new innovation is represented by closures molded of Polystyrene (Bakelite). This material has been chosen for acid containers because of its inertness.

In the wide-mouth sizes molded caps are used to seal such products as chemicals, cosmetics, creams, etc.

In the narrow-mouth sizes molded caps are ideal for use with such products as writing-inks, pharmaceuticals, wines, liquors, cordials, drugs, cosmetics, shampoos, polishes, and a host of other products.



89. Molded design with single sprinkler opening.

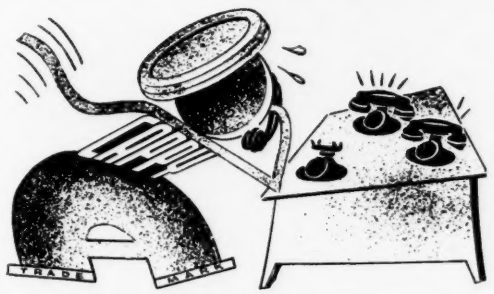


90. Molded jigger caps. Shown are top view, with debossed trade mark; sealing type jigger cap and cover type.



91. Transparent acid resistant closure molded of Polystyrene material.

AN *Alibi* IN ADVANCE



It's late in October as we're writing this ad. We've just returned from our first introductory trip with the FLIPSEAL cap. Frankly, we expected considerable interest because FLIPSEAL *does* overcome so many different objections of both producers and consumers to most caps now in use. But we were not prepared for the eagerness with which even staid "old timers" among buyers, plant men, and sales chiefs, reached for the cap and demanded samples in test run quantities.

When this ad is published several months from now, tests will have been completed in many plants. We believe quite a few contracts will have been placed and deliveries begun. Our original estimates of initial requirements, (on which basis we tooled up) now appear to have far undershot the mark! Should we find it difficult to make demonstrations, supply adequate samples and enter orders as promptly as is our custom, please bear with us. Our efficient production men are working hard to catch up.

Please don't think we're being coy about this new cap. Actually we're eager to have you see, test, and use it as quickly as possible. We believe sincerely that it's *the greatest major advance in capping and sealing which the industry has produced in years!* Read the case for FLIPSEAL. We believe you'll agree this is the cap the whole packing industry, and especially the army of consumers, has been crying for. Ask for a demonstration—we'll make it as quickly as we can.

THE CASE FOR FLIPSEAL

U. S. and Foreign Patents Pending

Designed with an entirely new friction-plus-vacuum sealing principle.

1. **Easy to get off—even under high vacuum—without knives, fancy tools, tear off, or troublesome gadgets—by women.**
2. **Easy, sure re-seal—every time—innumerable times—by women.**
3. **Top sealing features engineered from a production angle.**
4. **Handsome—functional design—no knurls, indentations, or other eye interference.**
5. **Practical for either vacuum (compound lined) or non-vacuum (paper lined) application—same finish glass for both lines—easy on inventory, buying.**
6. **Foolproof in the packing plant—finish checked by glass engineers—will be easy to hold within specifications—FLIPSEAL construction gives unique self adjusting qualities.**
7. **Hi-speed production—faster than most other forms of vacuum caps, much faster than screw caps for non-vacuum packing, with less danger of glass breakage.**
8. **Sealing equipment (a complete line for small, medium, and large packers) designed for freedom from trouble—very few parts, reducing likelihood of difficulty to a minimum—requires only the services of an ordinary mechanic, not the ghost of Thomas Edison.**
9. **Leading authorities on cap construction (among them several well known buyers or heads of large plants) have already approved the FLIPSEAL principle.**



PATENTS FLIPSEAL PENDING

The ARIDOR Co.

3428-40 WEST 48TH PLACE — CHICAGO

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Tamper-Proof Types



92. Pull-strip cap. One-piece, tamper-proof cap made of aluminum. Closure is opened by pulling weakened strip off in either direction.



93. Laboratory cap. Open topped, tamper-proof aluminum shell to go over special vacuum sealed discs. For use when re-closure is not desired.



94. Break-away cap. Made of aluminum and threaded on the bottle. Breaks open as top is unscrewed while base is held in place on locating plug.



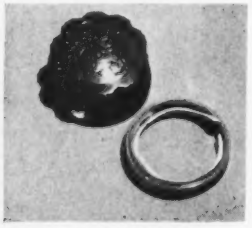
95. Safety cork. Tamper-proof aluminum seal over regular flange cork. Seal is broken by pulling weakened strip off in either direction.



96. Pelican cap. Large tamper-proof aluminum seal over regular cork. Disengaged top big enough to serve as drinking cup.



97. Canisters. Small aluminum tamper-proof cans. Screw or plain re-closure. Available in all color combinations. Photos courtesy Guardian Safety Seal Co., Inc.



98. Tamper-proof molded cap (private design). Band breaks upon removal of cap.



99. Left: Alter-proof seal. An aluminum two-piece cap for liquor bottles. The upper part is a single-shell screw cap; the lower an indented band which must be broken before the top can be removed. **100.** Right: Pilfer-proof cap. Made of aluminum. A single-shell screw cap with perforated extended side. As the closure is opened the band or perforated strip is broken.



101. Alseco R-Overseal. A tamper-proof tear-strip type for metal cans, used as a secondary seal.

Secondary Seals



102. Left: Cellulose cap or band (Wind-O-Band). **103.** Right: Viscose cap or band (Sylphseal). Self-sealing. Made in many grades and finishes.



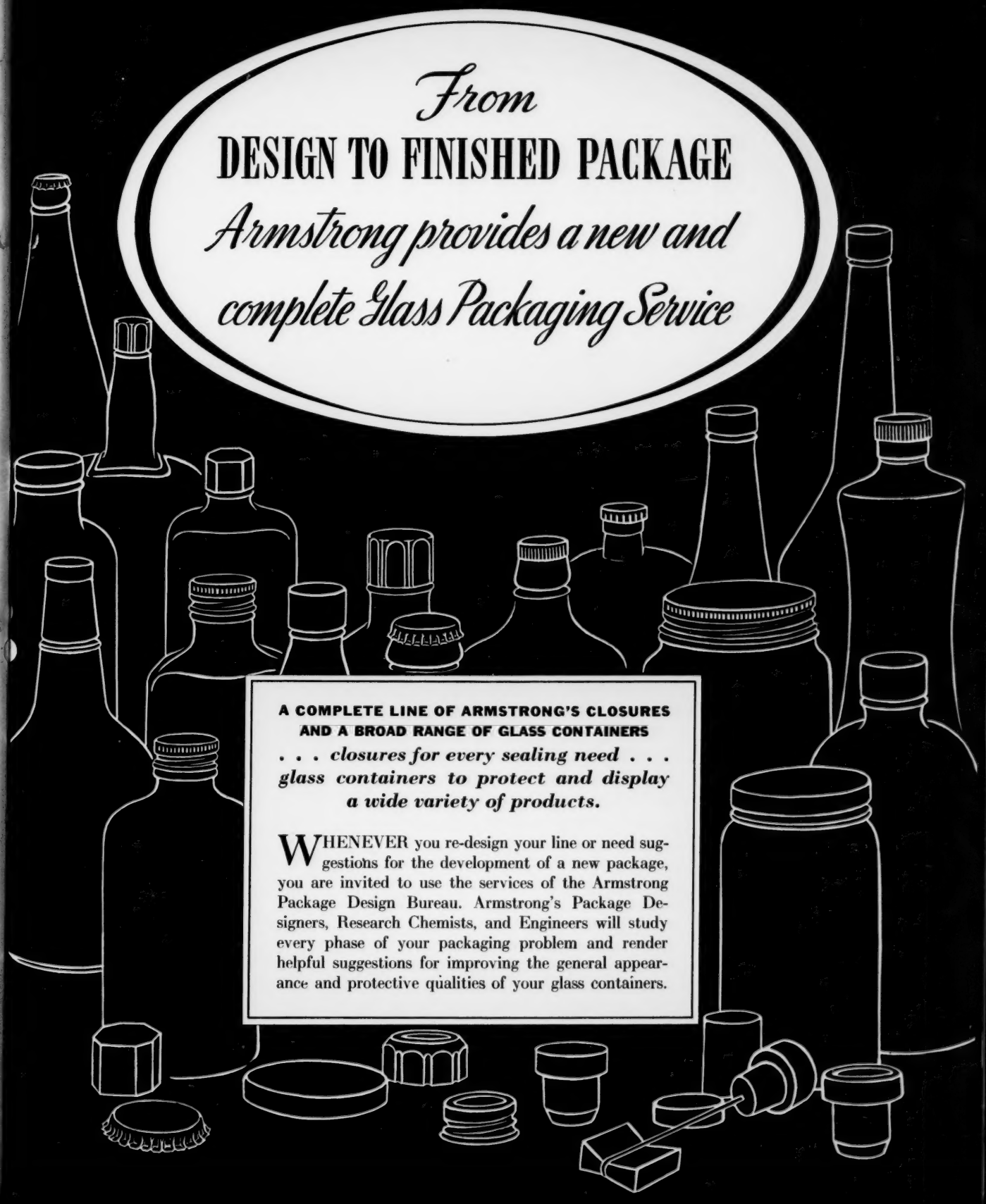
104. Cellulose cap or band (Cel-O-Seal). Fit over any type of closure and shrink tightly to the bottle neck.



105. Left: Identical in purpose with No. 104, but larger; hence applicable to jars for all uses. **106.** Right: Filma-Seal, paper type. Also furnished in tamper-proof hermetic types and in lead and aluminum foil types of glass or metal containers.



107. Slip or friction cover-cap with long skirt. Decorative. Top and under view.


From
DESIGN TO FINISHED PACKAGE
Armstrong provides a new and
complete Glass Packaging Service
A COMPLETE LINE OF ARMSTRONG'S CLOSURES
AND A BROAD RANGE OF GLASS CONTAINERS
. . . closures for every sealing need . . .
glass containers to protect and display
a wide variety of products.
WHENEVER you re-design your line or need suggestions for the development of a new package, you are invited to use the services of the Armstrong Package Design Bureau. Armstrong's Package Designers, Research Chemists, and Engineers will study every phase of your packaging problem and render helpful suggestions for improving the general appearance and protective qualities of your glass containers.



ARMSTRONG IS GLASS AND CLOSURE HEADQUARTERS

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SELECT THE *Right* CLOSURE AND GLASS COMBINATION FROM THIS COMPLETE LINE

ARMSTRONG is truly "Glass and Closure Headquarters" because, in addition to the line of Armstrong's Closures for every sealing requirement, glass containers for a wide variety of products are now available. Armstrong's packaging recommendations are never prejudiced in favor of any one combination of closures and glass because Armstrong manufactures a complete line of metal caps, molded plastic caps, crowns, and corks of all types. From this range of corks, caps, and glass containers, the units best suited to your individual requirements may be selected.

ARTMOLD CAPS and Jar Covers give packages a "finishing touch" of beauty and refinement. They are carefully molded from high quality molding compounds and are popular with users because of their beautiful colors and satin-like finish that is pleasant to the touch. These closures are available in stock designs—or custom molded to specifications.

TOPPED CORKS combine all the advantages of a good cork seal with the beauty and practical merits of a handsomely decorated wood, metal, or molded plastic top. Wood-Top Corks may be embossed in two colors with a trade-mark or design. Metal-Top Corks may be lithographed in any number of colors . . . and Molded-Top Corks are available in a wide range of beautiful colors and may be specially molded with private designs.

METAL CAPS and Jar Covers are manufactured in single-shell and double-shell types for both narrow-mouth and wide-mouth glass containers. They are supplied in attractive colors or lithographed with private decorations to your specifications. All Armstrong's Metal Caps are carefully formed from fine-grained, ductile metal.

GLASS CONTAINERS in both stock and private mold designs are available to manufacturers of glass packaged merchandise. The high quality, clear visibility, and distinctive contours of Armstrong's glassware are packaging advantages that create increased sales.

Included in the Armstrong Line are Liquor Ware, Medicinal and Toilet Ware, Wide-Mouth and Narrow-Mouth Food Containers, and General Purpose Ware.

In manufacturing glass containers for a wide variety of merchandise, Armstrong's constant supervision of every operation and rigid specifications for checking every detail assure you of dependable, attractively styled bottles that are consistently high in quality.

FOR QUICK, EFFICIENT SERVICE ON PACKAGING PROBLEMS CALL OR WRITE THE NEAREST ARMSTRONG BRANCH OFFICE

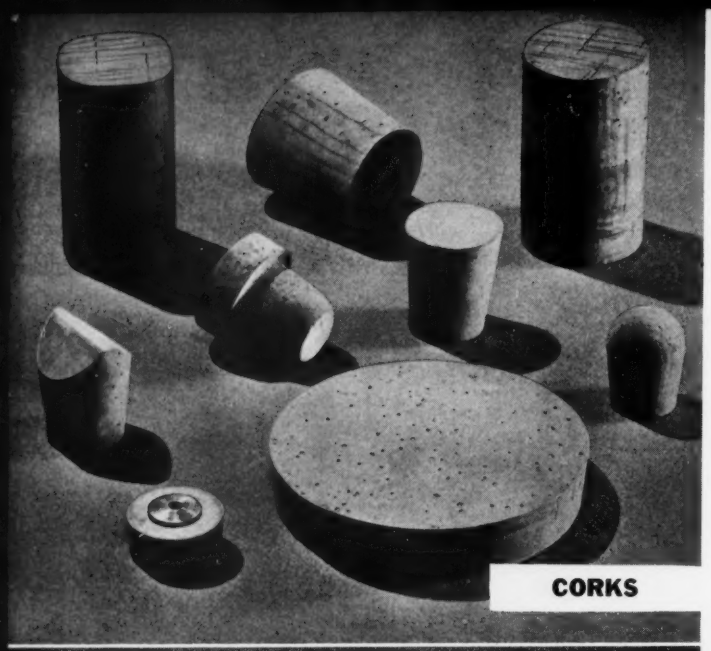
Armstrong's branch offices are located in principal cities to assure quick, efficient service. A telephone call or letter will bring an Armstrong glass packaging specialist at your convenience.

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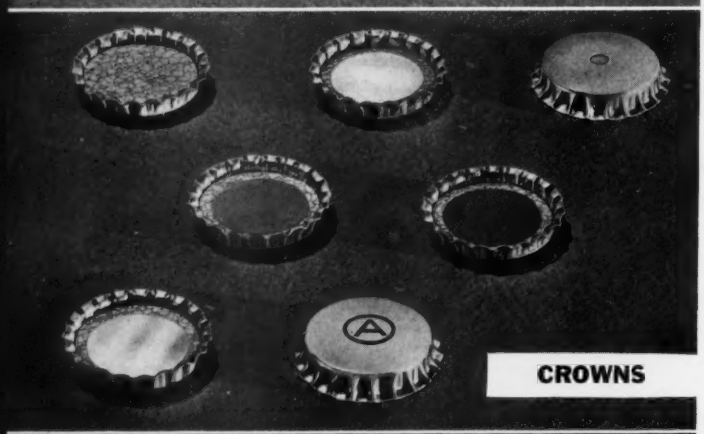


CORKS · METAL AND MOLDED CAPS · GLASS CONTAINERS

XUM



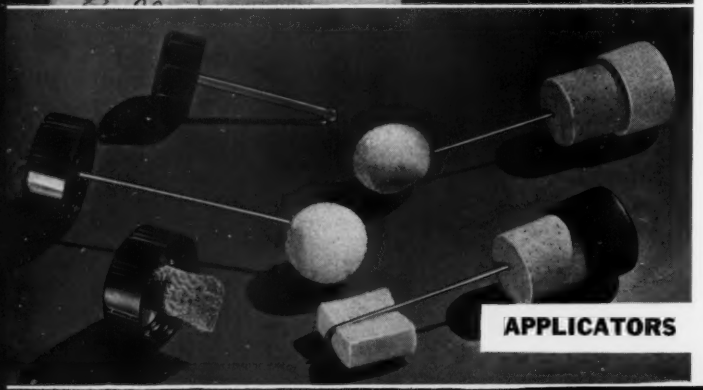
CORKS



CROWNS



"CEL-O-SEAL"



APPLICATORS

CORKS of all types for sealing a variety of products. All are accurately shaped . . . and each cork closure is twice inspected before being packed for shipment. Armstrong supplies straight corks, flange corks, champagne corks (tirage and expedicion), tapered corks, shell corks, wood-top corks, round-top corks, wedge-top corks, and orifice reducers.

CROWNS used for sealing beer, carbonated beverages, mineral waters, syrups, fruit juices, and other food products are available in stock designs, proprietary designs, or with specially lithographed decorations. Discs or liners are made of resilient cork—either plain or faced with tin foil, aluminum foil, or varnished paper.

"CEL-O-SEAL" caps and bands are made by du Pont and sold by Armstrong for use on liquors, drugs, food products, beverages, etc. They fit over any type of closure and shrink tightly in place. When impregnated with your trademark, by the du Pont patented process (U. S. Pat. No. 1997769) they prevent illegal duplication of your package.

APPLICATORS are supplied with glass rods, glass droppers, quill brushed, twisted-wire brushed, metal handle brushed, cotton, felt, and wool applicators on wire—and sponge rubber applicators on glass rods. They are available in combination with molded plastic caps, embossed wood-top corks, and also tapered corks.

A MODERN LABORATORY FOR TESTING PACKAGES

In order that the glass containers, closures, and cap liners that make up your package may be of the types best suited for use with each individual product, Armstrong maintains in its Central Technical Laboratory at Lancaster, Pennsylvania, a department devoted to the testing of materials used in the design of modern glass packages.

It is the responsibility of this laboratory to (1) determine the different combinations of glass, closures, and liners best suited to specific classes of products . . . and (2) develop (through careful study) individual recommendations for individual products.

Armstrong's laboratory, package design, and engineering facilities are available to every manufacturer of glass packaged merchandise. Give your package the protection and style available through this service. For complete information, telephone the branch office nearest you—or address Armstrong Cork Company, Glass and Closure Division, 910 Arch St., Lancaster, Pa.

ARMSTRONG CORK COMPANY

Glass and Closure Division **Lancaster, Pennsylvania**

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ARMSTRONG'S CORKS · METAL AND MOLDED CAPS · GLASS CONTAINERS

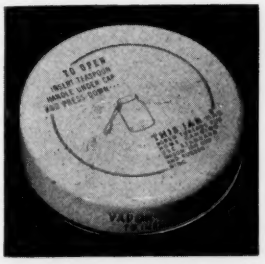
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108. Left: Catsup cover-cap. Friction type with small lugs. **109.** Right: Catsup cover-cap. Screw type.



110. Dose-cup. Aluminum. Affixed to top of bottle, over regular closure and held in place by screw thread. May be an ordinary slip cover.



111. Slip or friction cover-cap for Mason jars. Placed over standard deep thread screw cap.



112. Hoods or capsules of metal foil. Each hood covers the entire top and stopper, as well as the upper portion of the neck of the bottle. Made of aluminum and composition of tin and lead. Hand or automatic sealing machines are used in applying these.



113. Filma-Seal of transparent type used in conjunction with a perforated screw cap to preserve full strength of a spice while permitting use of convenience features embodied in perforations.



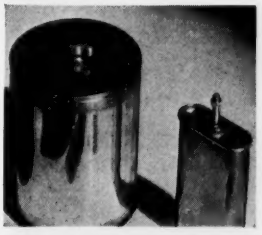
114. Aluminum foil hoods for milk bottles.

Closures for Metal Containers

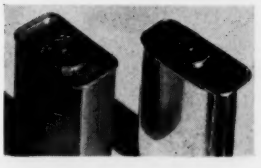
In this group are shown caps and closures generally applied to metal containers. In addition, there are various types of pouring-spouts which may be completely covered by the closure—such as that included with the Barroll cap (No. **123**)—or extend beyond it. All of the closures shown, with the exception of No. **125**, can be supplied direct by can manufacturers.



115. Top: Round lock top closure with inner paper seal. Used extensively for coffee cans. **116.** Bottom: Round sifter cap for cans containing talcum and other dry, free-flowing products.



117. Left: Wing-nut closure for sealing cans containing ether, etc. **118.** Right: Pouring spout, with screw tip, for small oil cans.



119. Left: Revolving sifter-dredge, for spice cans. **120.** Right: Slide cover, applicable to rectangular top cans, with or without rounded edges.



121. Sifter slide-dredge, for spice cans.



122. Left: Lug seal. Opens and closes with part turn. **123.** Right: Barroll spout and cap. Screw closure.



124. Left: U Press-It (inside pressure seal) with tear-off band. **125.** Right: Newman closure, spun on.



126. Left: Friction top, with or without inner seal. **127.** Right: Kork-N-Seal. Available also for use with wide- and narrow-mouth glass bottles.





128. Pour-N-Seal cap and nozzle closure for oval pouring spouts.

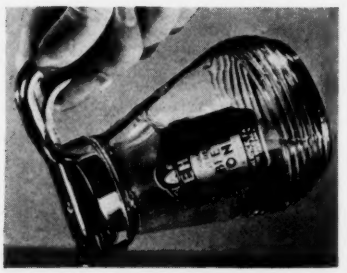


129. Lock-Tite slip cover.

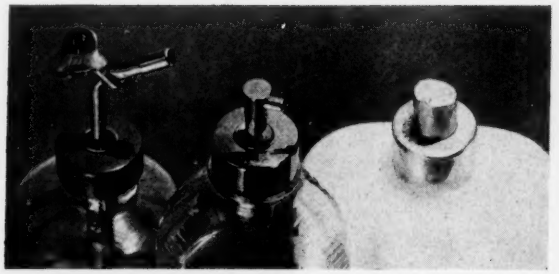
Dispensing Closures



130. No-Kap. An adaptation of a type originally used for collapsible tubes. Closure operates by the sliding of two perfect hemispheres against each other under pressure.



131. Premium type dispensing closure for thick, viscous fluids. Trigger action draws back a spring device. Release of trigger effects instant cut-off of flow. Photo courtesy Federal Tool Corp.



132, 133, 134. Dispensing type closures. Respectively, sprayer or atomizer, dispenser (continuous flow type) and dropper type dispenser. All are of the "push-down" spring type.



135. Four dispensing closures incorporating a drop-pumping device with either a metal or plastic continuous thread closure. Photo courtesy Scovill Manufacturing Co.

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MEET THESE MEMBERS OF THE *Johnson family*





THEY HAVE "ADOPTED" KORK-N-SEAL



In the modern plant of S. C. Johnson & Son, Inc., at Racine, Wisconsin, KORK-N-SEAL is part and parcel of the product family. And scores of other outstanding manufacturers the country over have found that KORK-N-SEAL gives them exactly what they want. First, an original seal that is uniform, leak-proof, thoroughly dependable. Second, a convenience feature for their customers—because KORK-N-SEAL is easy to remove and then to replace . . . These plus values are always reflected in plus sales. And they will do the same for your product. At today's new low price, it will pay you to investigate the many advantages of KORK-N-SEAL. The coupon below will bring samples, prices and full information without the slightest obligation. Mail it today.

WILLIAMS SEALING CORPORATION
Division of Crown Cork & Seal Company
DECATUR, ILLINOIS

POUR-N-SEAL



The first really satisfactory cap for sealing and re-sealing oval pouring spouts. Makes a positive seal at all points of the spout, even at the pouring point. Easy to remove, easy to replace. Ideal for products that present a pouring problem. Full information, samples and prices are available. Mail the coupon.



KORK-N-SEAL
THE CAP WITH THE HANDY LEVER

WILLIAMS SEALING CORPORATION.
Department PC, Decatur, Illinois.

Gentlemen:—We'd like to know more about ☐ KORK-N-SEAL and ☐ POUR-N-SEAL. Please send us samples, prices and full information—without obligation.

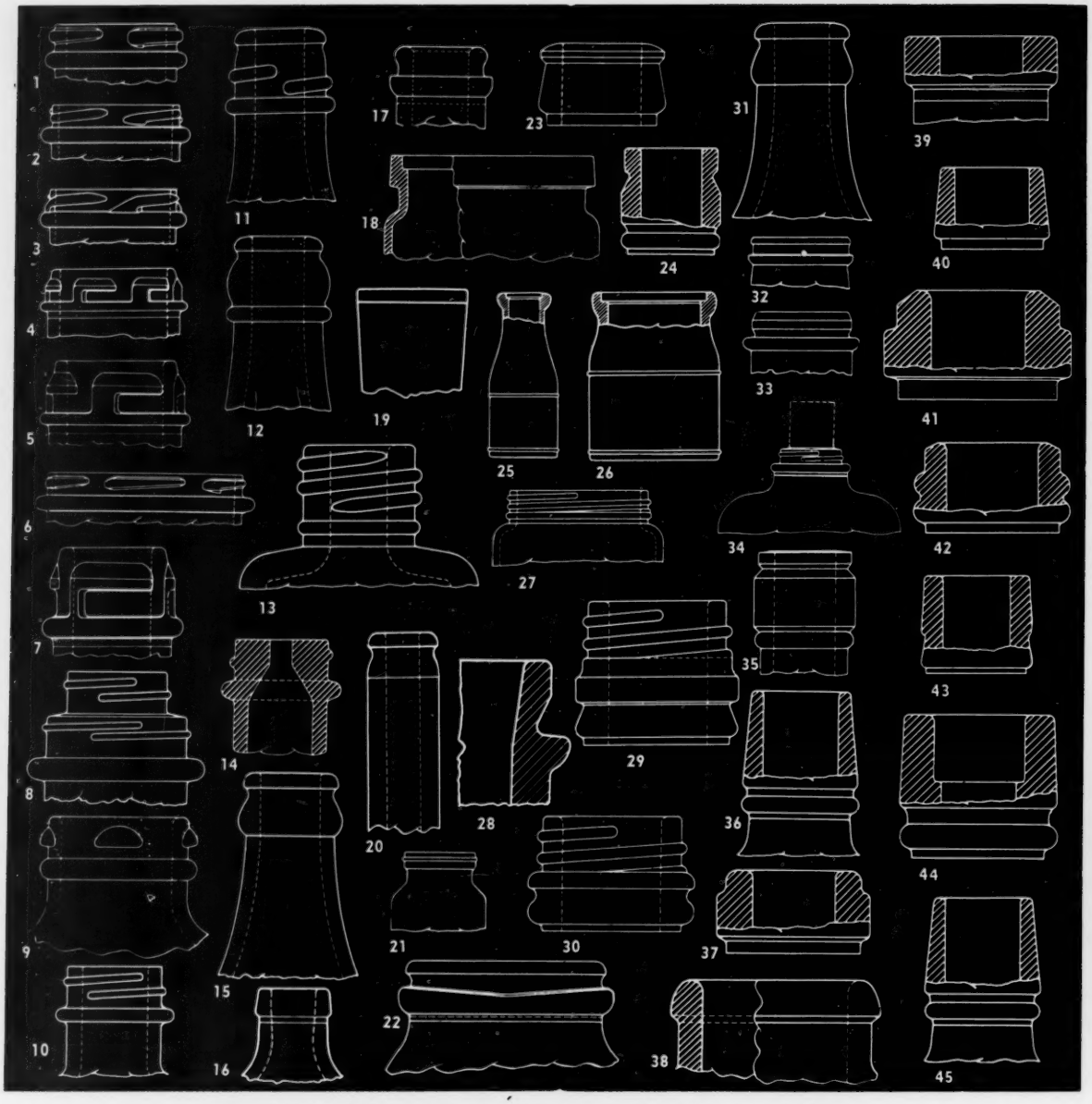
Name: .....

Company: .....

Address: .....

City: ..... *State:* .....

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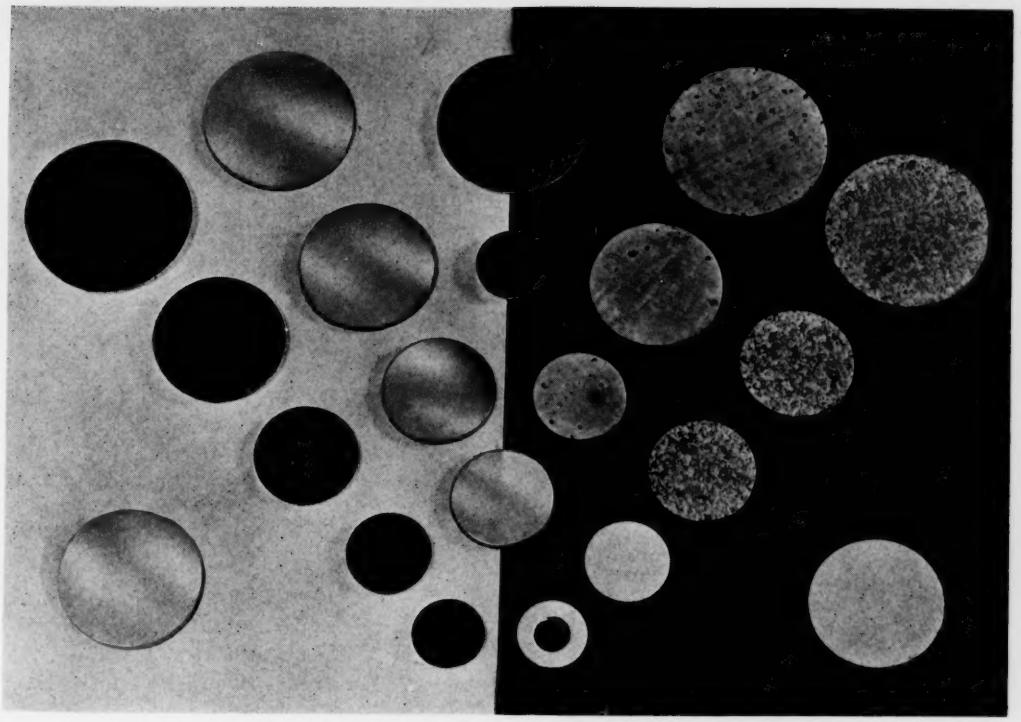


Diagrams furnished through the courtesy of the Glass Container Association of America

Glass Finishes for Closures

1. Two-lug Amerseal
2. Four-lug Amerseal
3. Four-lug vacuum Amerseal
4. Six-lug Sterling
5. Four-lug Sterling
6. Six-lug Amerseal
7. Three-lug Sterling
8. Combination tamper-proof
9. Duplex
10. Shallow continuous thread
11. Combination screw cap
12. Combination friction cap
13. Tall continuous thread
14. All glass sprinkler top
15. Crown beverage
16. Siphon bottle
17. Kork-N-Seal standard
18. Band cap
19. Anchor or friction
20. Small size Crown
21. Anchor bead
22. Variable ledge Pry-off
23. Goldy
24. Long Corseal
25. Milk bottle
26. Cottage cheese jar
27. R. O.
28. White Pry-off
29. Tamper-proof and alter-proof
30. Roverseal
31. Non-pressure Crown or Goldy
32. Straight ledge Crown Pry-off
33. Pry-off for Anchor "F" cap
34. Combination cup cap
35. Frankfort style
36. Brandy cork
37. Sauterne or cognac
38. Upressit
39. Square ring cork
40. Gin
41. Champagne
42. Italian vermouth
43. Standard wine
44. Glass stopper and shell cork
45. Guardian safety seal

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Liners of cork, felt, pulp board, rubber and special compositions, some faced with foil and others with special types of paper to resist chemical action. Photo courtesy Armstrong Cork Co.

Linings for Package Closures

by E. C. EMANUEL*

Closures influence the success of a glass container to a large degree. The sealing security that a closure provides is the manufacturer's assurance that the quality he packaged at his factory is still intact.

Many factors have an influence upon the condition of the product packaged in glass: the reaction of the product on the liner; the length of time the merchandise is held in the retail store; characteristics of the liquid—whether it is highly volatile, as in the case of organic solvents—or whether it possesses a tendency to spread into a very thin film, as in the case of the viscous oils; and many other considerations that are typical of individual products.

Since the liner represents a very tiny factor in total package costs, price considerations should influence, as little as possible, a manufacturer's selection of a liner to protect his product. Unless the liner is providing maximum protection for the product, it is worthless at any price. Furthermore, while a liner may satisfactorily seal the product marketed by one manufacturer, it does not follow that another product of a similar nature (but with a slight change in formulation) will be satisfactorily sealed with the same type of liner.

Manufacturer's Recommendations

To obtain the most dependable liner, laboratory recommendations by the cap manufacturer should be obtained—and the cap manufacturer's recommendations should, in turn, be checked by the laboratory of the manufacturer who packages the merchandise. Often it is desirable to run tests for extended periods of time. If the product is of considerable value, or of definite germicidal strength, tests ranging from six months to one year are often set up. In the case of products possessing germicidal strength, a reaction with the lining material may possibly take place.

Liners may be divided into two fundamental classes: (a) homogeneous and (b) duplexed or faced.

* Armstrong Central Technical Laboratories.

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The homogeneous liners, such as natural cork, cork composition, rubber and the special solvent type materials used to retain organic solvents, are generally used for special purposes. Natural cork and cork composition may be used for oils in the medium or higher viscosity range—and for products sold quickly, where the shelf life is not over six months. In the case of products that contain volatile solvents, natural cork and cork compositions are not generally recommended.

Rubber liners find general use for alkaline preparations, the hypochlorides and certain acids. They are especially adaptable to caps equipped with wells or posts. Certain of the organic solvents—the hydrocarbons (gasoline) and the chlorinated solvents (carbon tetrachloride)—swell and deteriorate rubber. Therefore, special highly compounded liners are indicated where post type caps are used with such products. Solvent liners are indicated where organic solvents are to be retained, since these liners are protein in their nature.

Duplexed Liners

Duplexed liners (facings applied to a backing material) are not suitable for post or well type caps, since the efficiency of this type of liner depends upon the facing material employed. In post or well type caps, the liquid will contact the backing material at the juncture of the post or well, since the liquid can pass through this space. A suitable homogeneous liner must, therefore, be chosen to effect proper sealing, supplying, at the same time, suitable resistance to the liquid in question.

Several types of backing material may be supplied for duplexed liners. Pulpboard, newsboard, white or gray felt and various types of cork compositions are the materials most commonly used for this purpose. The felts are rapidly losing favor and the standard materials most widely used are pulpboard and cork composition. The backing materials are supplied in various thicknesses to fit the particular bottle cap and glass container finish. Where the bottle finish is good, pulpboard may be used with safety. It is less compressible and does not possess the "comeback" of resilient cork composition. If the product is not difficult to seal and the bottle finish regular, this lower-priced material may be used.

In cases where the product is difficult to seal—or where there may be any variations in the bottle finish or cap—cork composition is definitely indicated. Cork can be compressed over a high point in the bottle finish and will also expand to fill a low point or valley.

Facing materials used on the three standard backings are: metallic foils, varnished papers and synthetic facings. Of the metallic foils, tin, lead and aluminum find general use in the order listed. The foil may be mounted to a white sulphite or kraft paper before being applied to the backing material. This combination produces a smooth, neat appearing liner. Tin foil is generally used in .0015 in. thickness.

Lead is occasionally used for industrial products such as varnishes, varnish removers and paint thinners.

Varnished papers consist of paper (kraft or drab express) coated on one or two sides with one or several applications of a water-resistant or special type varnish. The common types are pale yellow oil, regular yellow oil and black alkali paper. The regular yellow oil paper (often classified as light brown oil) is generally used for food products such as mayonnaise, peanut butter, pickles, etc. The pale yellow paper is used for maraschino cherries and other food products.

Black alkali paper finds its use in cosmetic and pharmaceutical preparations. It is resistant to mild alkalies but is not resistant to the stronger alkalies. None of the varnished papers are indicated in connection with solvents, essential oils or products containing over 50 percent alcohol. They possess a varnish-like odor and tend to transmit a slight off-taste to mildly flavored products. Several patented and trade name varnished papers are available which have improved resistance to acids, alkalies and certain solvents.

The synthetic facings are Vinylite and Panaseal. Vinylite is basically a co-polymer of vinyl acetate and vinyl chloride. Panaseal is made from a rubber base that has been highly refined and chemically modified. These two facings are mounted on white sulphite paper, are white in color and neat in appearance. They are tasteless and odorless and are appropriate for use with a wide variety of products. Certain essential oils and organic solvents attack them. They are, however, more resistant than varnished papers, less permeable to water and outstanding in their freedom from taste and odor. While not all-purpose liners, Vinylite and Panaseal give excellent service with very many products.

Waxed papers are also used as liner facing materials. Quality white waxed paper (a material waxed on two sides) has been generally used for aqueous creams. It is not an ideal liner because, once having been flexed, a crack may appear in the surface which will permit the transmission of moisture to the backing. In addition, if the cap is tightly applied—or the sealing surface of the container is sharp or rough—the wax may be ruptured so that evaporation can then take place.

Recent Developments

One interesting new development involves the use of woven glass fabric, wax impregnated, as a liner for the new Polystyrene closures used on acid-containing bottles.

The most satisfactory solution of liner problems lies in testing of the various materials with the product to be sealed. Leading cap manufacturers maintain laboratories to assist the manufacturer in the proper selection of a liner for a new or standard product. It is profitable to patronize these services. Be certain that the liner has a factor of safety for it is the liner, cap and container that constitute three equally important links in placing the glass packaged product in the hands of the consumer in factory-fresh condition. Any failure of one of these three results in disappointed customers.

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LABELS, SEALS, TAGS

SECTION SEVEN

Pages 237 to 254

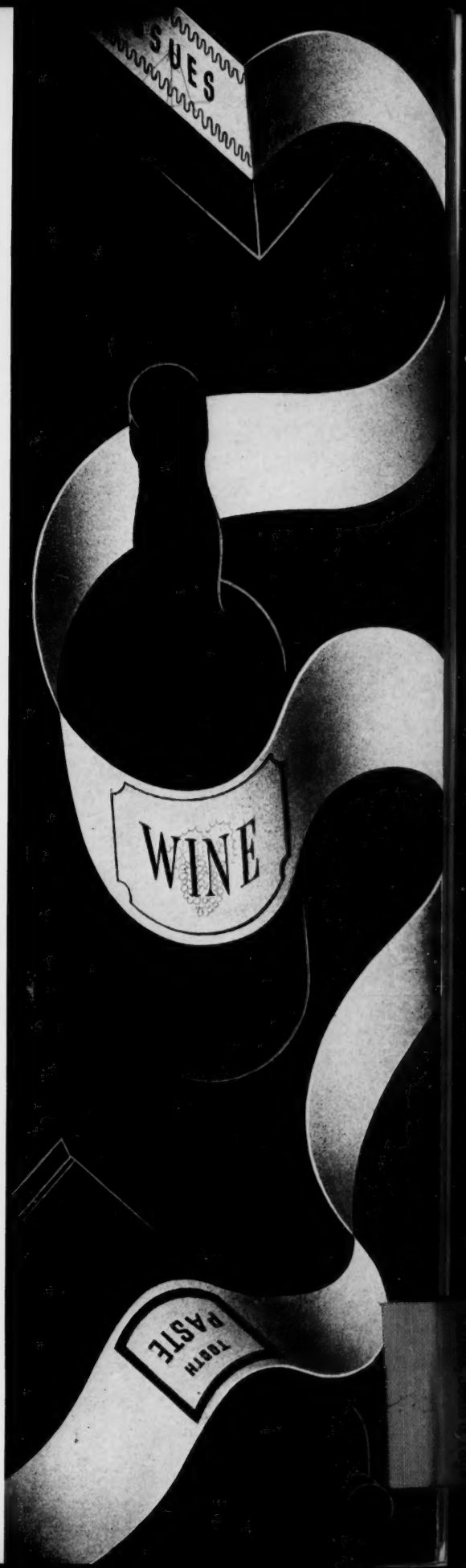
PRINTED AND LITHOGRAPHED LABELS

TRANSPARENT-BACKGROUND LABELS

EMBOSSED LABELS AND SEALS

MERCHANDISING AND INFORMATIVE TAGS

PACKAGE ADVERTISING LITERATURE



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Printed and Lithographed Labels

by M. C. FENTON, JR.*

So many buyers of labels think that the label manufacturer can "press a button" and produce his label; they do not realize the various steps necessary before the label is completed.

Let us suppose there is a buyer who requires a label for an entirely new package. He may, or may not, have an idea of what he wants, except that he wishes the finished product to be thoroughly adaptable to his needs and attractive. In this instance, a salesman must keep his eyes and ears open to catch any faint hints as to what the ultimate label should be. He transfers what meager information he has to the artist, who is especially qualified and trained to solve such problems. When the sketch is completed, the salesman returns it to the buyer and, if he is fortunate, the buyer approves the sketch. In most instances, however, this will not be the case; he may have to make several other sketches or at least several revisions of the original sketch before he is in a position to proceed with the necessary original engravings. After the engravings are made, a proof must be pulled and again presented to the buyer for his approval or correction before proceeding with the printing or lithographing of the label.

In the case where it is only necessary to reproduce an existing label or wrapper, considerable time can be saved, for it will be necessary only to make the original engravings from the sample furnished, pull proofs and, after proofs are accepted, proceed with the manufacture of the labels ordered.

* Vice-President and Secretary, The National Color Printing Co., Inc.

If one stops to think, it is perfectly obvious that these various steps require time and that it is to the advantage of both the buyer and seller to allow as much time as possible for these operations. Taking into consideration the two cases cited above, a reasonable length of time on the first one would be four to six weeks; in the latter case, three to four weeks.

In any case, too much importance cannot be placed on accuracy of instructions and specifications. The label manufacturer is making a "tailor made" product and errors are costly to all concerned, since the correction of them is too late after the product is finished.

General Types of Labels

In discussing the general types of labels and wrappers, it is probably best to take up the general sub-division of containers one at a time, with a brief discussion of the types of labels appropriate to its division.

Glass: As the container is transparent, there is no necessity of showing an illustration of its contents. The sole purpose of this type of label is to identify the manufacturer, advertise the brand name, add an attractive touch of color to the package and enhance the value of the product in the consumer's eyes.

Package wrapper: The main function of this style of wrapper is to make an attractive and relatively inexpensive package which will keep the product free from contamination. In the event the manufacturer wishes to bring out the full value of the colors used on the



1. Glass labels are usually designed to permit the display of the product through the walls of the container. Die-cut shapes are frequently worked into harmony with the container design. Note, however, how some glass packed products utilize labels deliberately designed to obscure the view of the product, as in the case of C & B Meat Sauce.

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La[redacted]el

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USINESS
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5000 for $3.00
YOUR OWN COPY AND ARRANGEMENT
Size 2" x 1¼"
WHITE GUMMED STOCK
BRIGHT RED OR BLUE INK
PERFORATED *Ever Ready* ROLLS

Thousands bought them because the price was right and their uses unlimited.

Soon we started making—

- **SHIPPING LABELS** . . . From the simplest address form to a label that includes Shipping and Handling Instructions; Advertising; Packaging Design.
- **ALL-PURPOSE LABELS** . . . To direct use; to mark a price, a style, a lot number; to feature a "special"; to collect a bill; to signal; to identify.
- **ADVERTISING LABELS** . . . Low cost action-getters that ride free with letters, circulars, packages.
- **PACKAGING LABELS** . . . (500,000 bottle labels were just shipped to Rap-I-Dol Distributing Corp.)

We can handle your job, too!

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Ever Ready Solves Label Problems



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TELEPHONE
Our Representative to Call
MAIN 1234
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to send a PACKAGE by RAILWAY or AIR EXPRESS
Before you say it- boil it down to the essential message
AVOID DELAY
EVERY BUYER A WIRE
If it's SPEED you want
Don't Write
WESTERN UNION
PACKED WITH COLOR AND PEP OUR STICKERS ARE POWERFUL SALES AIDS. WE WOULD USE STICKENS IF LIMITED TO ONLY ONE FORM OF ADVERTISING.
WESTERN UNION
Used by Western Union Telegraph C
Used to promote N. R. A.
THE BLUE EAGLE By Gen. Hugh S. Johnson
President Roosevelt says: The display of this seal on your packages and letters means consumer good will
Used by Railway Express Agency
THIS SIDE UP WITH CARE
FRAGILE: GLASS! HANDLE WITH CARE
CUT FLOWERS
RUSH
VALUABLE ANTIQUE HANDLE CAREFULLY
LABELS that MEAN what they SAY
"RUSH!" . . . "PERISHABLE" . . . "KEEP from HEAT and COLD" . . . "DELIVER IMMEDIATELY on ARRIVAL" . . . these are a few of the many special labels used by Railway Express to insure speed, safety and careful handling. And these shipping instructions are not "suggestions" to our 50,000 employees. They are orders . . . orders that must be followed literally.
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RAILWAY EXPRESS AGE
Used by R. C. A. Communications
BUSINESS OPPORTUNITY IN CHINA
Money to Spend
R. C. A. RADIOGRAMS
FOR UTMOST SPEED
RCA
RADIOGRAM
R.C.A. COMMUNICATIONS, INC.
Business Opportunity in China Via RCA
Stickers flash advertising messages that go across
A. A. ISBELL
Commercial Manager
Ever Rea
LABEL
Go PLACE
Do THING

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Labels ARE "MINIATURE BILLBOARDS"



We know of no business that cannot profitably use ad stickers. The plications of these labels are limitless! Examine the samples illustrated you'll quickly get an idea for applying them to **your own business.** usands of printers and stationers submit their own and customers blems to us for solution—convincing proof of our five point program.

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16 for a penny—USE THEM FREE



FREE

Ever Ready Label Holder

• With your order we supply this duco finished label holder. Not only is this holder efficient in operation—it is attractive in appearance—suitable for office use. The holder (value 50c) is offered to you without charge—so that you may better enjoy the absolute convenience of roll labels.

• BUTCHER—BAKER—CANDLESTICK MAKER . . . and **you** can these labels to advertise your business—to speed up office routine—mark merchandise—as business cards **that "stick"** plus hundreds of ot uses. Printed for you in red or blue—any copy you want—gummed—perforated rolls—easily detached—size 2" x 1¼"—60c per thous in 5000 lots or $3.00 complete, including holder. In two color and blue) $3.75 for 5000.

1/2 minute

YOU FIGURE IT YOURSELF THE *Ever Ready* WAY!

To Find Your Label Price

ace BOTTOM LEFT corner of your label on the tip of red ow. The upper right corner of label strikes a square in which u will find the price of your label.*

**Ever Ready offers this simple price finding method for rapid and con- ent pricing of labels on white gummed and ungummed paper, printed red, blue, black, green or brown ink, square or rectangular in shape, rforated in rolls or cut single.

**For prices on two color printing or colored paper, add 25% to the ces indicated in the panel.

For prices on die cut labels, or labels printed on gold or silver paper, d specifications for special quotations.

*Prices subject to Federal, State and Municipal taxes.

**A few exceptions are clarified on the following pages.

	1	2	3	4	5	6
6						Price Per Thousand 5000 2.70 10000 2.40 25000 2.25
5					Price Per Thousand 5000 2.70 10000 2.40 25000 2.25	Price Per Thousand 5000 2.55 10000 2.10 25000 1.95
4				Price Per Thousand 5000 2.55 10000 2.10 25000 1.95	Price Per Thousand 5000 2.40 10000 2.00 25000 1.85	Price Per Thousand 5000 2.55 10000 2.10 25000 1.95
3			Price Per Thousand 5000 1.80 10000 1.60 25000 1.45	Price Per Thousand 5000 2.00 10000 1.80 25000 1.60	Price Per Thousand 5000 2.20 10000 1.85 25000 1.70	Price Per Thousand 5000 2.40 10000 2.00 25000 1.85
2		Price Per Thousand 5000 1.35 10000 1.20 25000 1.05	Price Per Thousand 5000 1.50 10000 1.30 25000 1.15	Price Per Thousand 5000 1.70 10000 1.50 25000 1.35	Price Per Thousand 5000 1.90 10000 1.60 25000 1.45	Price Per Thousand 5000 1.80 10000 1.60 25000 1.45
1	Price Per Thousand 5000 .70 10000 .65 25000 .55	Price Per Thousand 5000 .90 10000 .80 25000 .70	Price Per Thousand 5000 1.15 10000 1.00 25000 .90	Price Per Thousand 5000 1.35 10000 1.20 25000 1.05	Price Per Thousand 5000 1.50 10000 1.30 25000 1.15	Price Per Thousand 5000 1.70 10000 1.50 25000 1.35

Write for special Quotation



Square Inch System

By multiplying the length by the width of any label you arrive at the square inch area. This is the basis for our method of pricing labels. The scale above SIMPLIFIES a simple method.

For example, a label 3" wide and 5" long measures 15 square inches (3" x 5"). When placed in the bottom left corner of the chart it strikes a square showing that this label in quantities of 5000 costs $1.90 per 1000; 10,000—$1.70 and 25,000—$1.50.

We have on pages 4 to 19 of this catalog attempted to show the types of labels most intimate to your own business. Consider every label as an idea that, with changes, may suggest some practical application to your own needs.

XUM


1 2
Ever Ready Holder FREE with your order
• PAPER—white gummed • INK—choice of red or blue • Perforated in rolls (cut single if preferred) • Second color—add 25% • Colored paper—add 25% (25,000 or more; in smaller quantities request quotation) • For available colors see page 47 • For ungummed papers or larger quantities, write for special quotation.
Ever Ready LABELS
FOR IDENTIFICATION ADVERTISING
—including marking merchandise—to indicate price and contents—for inter-office notations—for factory inspection—for salesmen's stickers, and other uses suggested by illustrated labels.
Where manufacturing economies are important, large users of small labels should submit details of requirements for special consideration, i.e., quantities of 25,000 or over.
FINEST QUALITY RYE BREAD
No. 455 1 x 1 in.
ALL OF OUR EMPLOYEES and EXECUTIVES ARE BONDED FOR YOUR SECURITY
No. 456 1 x 1 in.
SAMPLE of
No.
Price $ per Gr.
Columbia Plush & Puff Co.
231 Hankins St. Brooklyn
483 W. Erie St. Chicago
145 Fremont St. San Francisco
No. 483 2¼ x 1¼ in.
THE L & L MEN'S SHOP GAINESVILLE, FLA. 75¢
No. 457—¾ x 1 in.
FROM E. BUNCHER PAINTS—HARDWARE MILLBURN, N. J.
No. 458—¾ x 1¼ in.
Date Sold
Date Tested
Satisfactory
Unsatisfactory
Doubtful
No. 1½ x
RAYTHEON PILLAR RADIO TUBE
No. 485 1 x 1½ in.
AMSCO PRODUCTS
No. 459 ½ x 1¼ in.
PALISADE BAKERY J. KUPISZEWSKI, Prop. NRA 242 Palisade Avenue GARFIELD, N. J. Phone: Passaic 3-8736
No. 460 1 x 1 in.
JAMES M. McCUNN N. Y. STATE LICENSE NO. L.L. 153 314 WEST 14th ST.
No. 486 ½ x 3 in.
Sec. 562 P. U. S. POS PA Brookl mit
MACY'S FILLED IN STOCK ROOM
No. 462 ¾ x 1 in.
NRA REGISTRATION 19—3 ISSUED BY PICTURE MOULDING AND PICTURE FRAME CODE AUTHORITY
No. 461 1 x 1 in.
FOR SALE BY SOUTHERN BEAUTY SUPPLY CO. 448 Granby St. Norfolk, Va. PHONE 41765
No. 466 1 x 1 in.
VIA AIR MAIL
No. 488 ¾ x 2 in.
W. F. SMITH NEWARK BUICK CORP. 198 CENTRAL AVENUE Mar. 2-8340 Newark, N. J. REPRESENTING BUICK PONTIA
No. 489 1 x 1½ in.
Regular Price $1.00 SPECIAL 75¢
No. 463 ½ x 1¼ in.
RADIA-LITE Lamp Pull SHINES IN THE DARK
No. 490—1 x 1½ in.
CHEMICAL BANK & TRUST ★ 320 Broadway
No. 491
CHARLES SCRIBNER'S SONS Educational Department
No. 465 1 x 1 in.
NEW YORK OFFICE TELEPHONE WISCONSIN 7-1288
No. 464 ½ x 1¼ in.
Complies with A. D. A. Specification No. 6 Batch No.
No. 469 1 x 1 in.
MADE IN U.S.A.
No. 468—½ x 1½ in.
J. E. DoubleRY VOGEL MUSIC CO. INC.
No. 493 1 x 1¼ in.
MONOCRAFT
Style
Price
24K GOLD ON SILVER FINISH
No. 467 ¾ x 1 in.
COMPLIMENTARY must not be sold
No. 470 ½ x 2 in.
FOR SALE BY GIMBEL'S PHILADELPHIA NEW YORK
No. 471 ¾ x ¾ in.
HYGEIA PROFESSIONAL PHARMACY, INC.
M. Berlind APOTHECARY
No. 494—½ x 3 in.
Pittsburgh Chime Co. 382 Market Street PRICE NO. COST
No. 472 ¾ x 1 in.
NATIONAL OLD AGE PEOPLE'S PENSION and UNEMPLOYED ASSOCIATION
No. 473 ¾ x ¾ in.
MADE IN U.S.A.
No. 474 ½ x ½ in.
WILLIAM KLAHR Plate GLASS Window
X No. 475
22 So. Lexington Ave. White Plains, N. Y. Phone W. P. 5787
1 x 1 in.
MAILED — BY — REQUEST
Please Deliver to person addressed IMMEDIATELY upon receipt from POSTMASTER
No. 496—2 x 1 in.
WAGGONER REFINING CO., Inc. ELECTRA — TEXAS — DDD MOTOR OILS
Oil Changed
Date Greased
No. 495—1 x 3 in.
EMORY UNIVERSITY BIOLOGY DEPARTMENT
No. 477—1 x 1 in.
GUARANTEED ALL WOOL
No. 476—½ x 1¾ in.
Tested and Approved 4520 Bureau of Food Sanitation and Health GOOD HOUSEKEEPING MAGAZINE
No. 478—¾ x 1¼ in.
15c DEPOSIT ON THIS KEYSTONE CONTAINER
No. 479 1 x 1 in.
Distilled by COLONIAL DISTILLING and DISTRIBUTING CORPORATION 398 Greenwich Street New York, N. Y. N. Y. State A B C Board DLB-6
No. 497—1 x 3 in.
The IDEAL To Duplicate Order No. 55 MADE BY THE J. L. HAMSON CO. CHICAGO, ILL.
No. 480—¾ x 1 in.
INTERCHANGEABLE —FOR— STANDARD TYPEWRITERS
No. 481—½ x 2 in.
DAMAGED BEFORE BEING PACKED SUBURBAN STORAGE
No. 482—1 x 1 in.
Chicken or Cheese Ravio
No. 499—½ x 4 in.
"NO ONE OFFERS WHAT EVER READY OFFER

3
SQUARE INCHES
(ON THIS PAGE)

PRICES
Per Thousand
5,000 - 70c
10,000 - 65c
25,000 - 55c

ew York City
CHRISTIAN
NDEAVOR UNION
HEADQUARTERS
SECOND PRESBYTERIAN CHURCH
3 W. 95th St.
3rd Thursday Each Month
No. 500—1½ x 2 in.

DO NOT SEND TO FILE
REFER TO
No. 501—2 x 1½ in.

H. J. ELECTRIC CO., Incorporated
LICENSED
Electrical Contractors
85 KENMARE ST., NEW YORK CITY
TELEPHONE • CANAL 6-8284
No. 502—1⅝ x 2½ in.

Ever Ready Holder
• PAPER—white gummed. • INK—choice of red, blue or black. • Perforated in rolls or cut single if preferred. • Second color—add 25%.

IOME MADE
Spanish
RELISH
★
OLD LOG BRAND
★
Schaefer & Aldridge
Indianapolis
NET WEIGHT 7 OZS.
No. 503—2¼ x 1¼ in.

ORIGINAL INVOICE
INSIDE THIS PACKAGE
No. 504—1 x 3 in.

THIS INVOICE
SUBJECT TO
2% DISCOUNT
10th OF MONTH
FOLLOWING DATE OF
INVOICE OR
NET 15th OF SECOND
MONTH FOLLOWING
DATE OF INVOICE
No. 505—2¾ x 1½ in.

French
Hand and Skin
Balm
Restores moisture to dry skin, makes chapped, rough, red skin smooth, soft and white.
CHEMICAL SPECIALTIES CO. New York, N. Y.
No. 511—2⅜ x 1¼ in.

Purchased by
Greig & Greig
LL 32
IMPORTERS of RARE WINES & SPIRITS
342 Madison Avenue
New York City
No. 506—1 x 2¾ in.

LOTIA VELVA
Soothes chapped, rough and red skin and hands—keeping them smooth and white. Excellent, to relieve and prevent Sun or Wind Burn—after household work—before and after shaving.
Apply very sparingly massaging well into skin until dry—not sticky.
No. 507—2 x 1⅜ in.

EASTERN AGENTS
MAYNZ & CO.
1775 BROADWAY NEW YORK CITY
TELEPHONE: CIRCLE 7-6825
No. 508—1 x 2½ in.

O. K.
FEEBLE
REPLACE FOR GOOD RECEPTION
MODERN RADIO SERVICE
815 WEST 181st STREET
WAshington Heights 7-4228
Date
No. 510
1½ x 1½ in.

FOR ALL TEXTURES OF HAIR
Fill with Liquid No. 2 even with the top edge of sticker. Then add Liquid No. 1 and shake well. This quantity when mixed is sufficient for 34 to 36 curls.
Milkee Process
No. 512—1 x 2⅛ in.

NOTE
labels cover a wide range of general
y purposes. Note No. 522 offering a
ufacturing or identification system. Ever
dy's presses can number and perforate to
ike the label flexible for the most difficult
equirements. These, of course, are subject
o special quotations. No. 514 is used by a
coal vendor indicating that no business or
profession exists that cannot profitably use
Ever Ready labels.

FIFTH
PACKAGING EXPOSITION
PALMER HOUSE
CHICAGO
MARCH 2-8 1935
No. 509—2¾ x 1½ in.

WE ARE CO-OPERATING with
BETTER HOUSING PROGRAM
REPAIR ALTER IMPROVE
No. 513—2 x 1½ in.

RED DEVIL
COAL
EXCLUSIVE DISTRIBUTOR IN WESTCHESTER COUNTY
WESTCHESTER COAL CORPORATION
PAULDING ST., WHITE PLAINS
Tel. WHITE PLAINS 7000
No. 514—2 x 1½ in.

POSTER STAMPS
Labels of these sizes are particularly adaptable for use as poster stamps—so popular in present day merchandising. We will gladly submit ideas for the use of poster stamps as sales stimulators in your business.
Refer to Pages 36-37

XUM

4
SQUARE INCHES
(ON THIS PAGE)

PRICES
Per Thousand
5,000 - 90c
10,000 - 80c
25,000 - 70c

FREE with your order
Colored paper—add 25% (10,000 or more). For available colors see page 47. • For larger quantities, or unsummed paper, write for quotation.

Courage that Propels
banishes, Fear, Worry, Gloom, Despair; gives moral incentive and purpose. "15 reassuring messages of God's power and comradeship in times of crisis," commends Christian Century.
By G. Ray Jordan $1
A COKESBURY GOOD BOOK
No. 515—2½ x 1½ in.

Prices on this order are subject to increc
due to any Federal or State laws taxing r
or processed materials or governing t
working hours or compensation of lab

NEUMANN COFFEE
C. J. NEUMANN COFFEE CO., Inc.
333 ST. JOHN'S PLACE BROOKLYN, N. Y.
Famous Coffees & Teas
PHONE: PRes 4700
No. 516—1¾ x 3 in.

CLINIC OF THE
Cornell University Medical Colleg
1ST AVE. & 27TH ST. N. Y.
teaspoonful in
water
after meals. times a day
SHAKE
No. 521
1⅜ x 2¾ in.

INTERNATIONAL SHORT WAVE RADIO CLUB
No. 518—2 x 1¾ in.

CELEBRATE
ARMISTICE DAY
(November 11th)
WITH THE
AMERICAN LEGION
IN BETHLEHEM
MONSTER PARAD
and CELEBRATIO
No. 519—2 x 2 in.

HOLIDAY SPECIAL
BIRDSEYE FROSTED
FRESH RASPBERRIES
11c per pint
Use like Fresh Raspberries
HENRY KELL
413 WEST 14
SONS, Inc.
NEW YORK
No. 520
2 x 2 in.

WERSTED MOTOR CO.
A Loan Battery Was Installed To-day
Rental Charge per day 25c
Minimum Charge 50c
YOUR BATTERY WILL BE READY
IN TWO OR THREE DAYS
PHONE WINNETKA 165
No. 524—1½ x

No. A 09988
No. A 09988
No. A 09988
LICENSED UNDER LEKTOPHONE
PATENTS—1,271,527
1,271,529
1,271,528
OTHER PATENTS PENDING
No. 522—2½ x 1½ in.

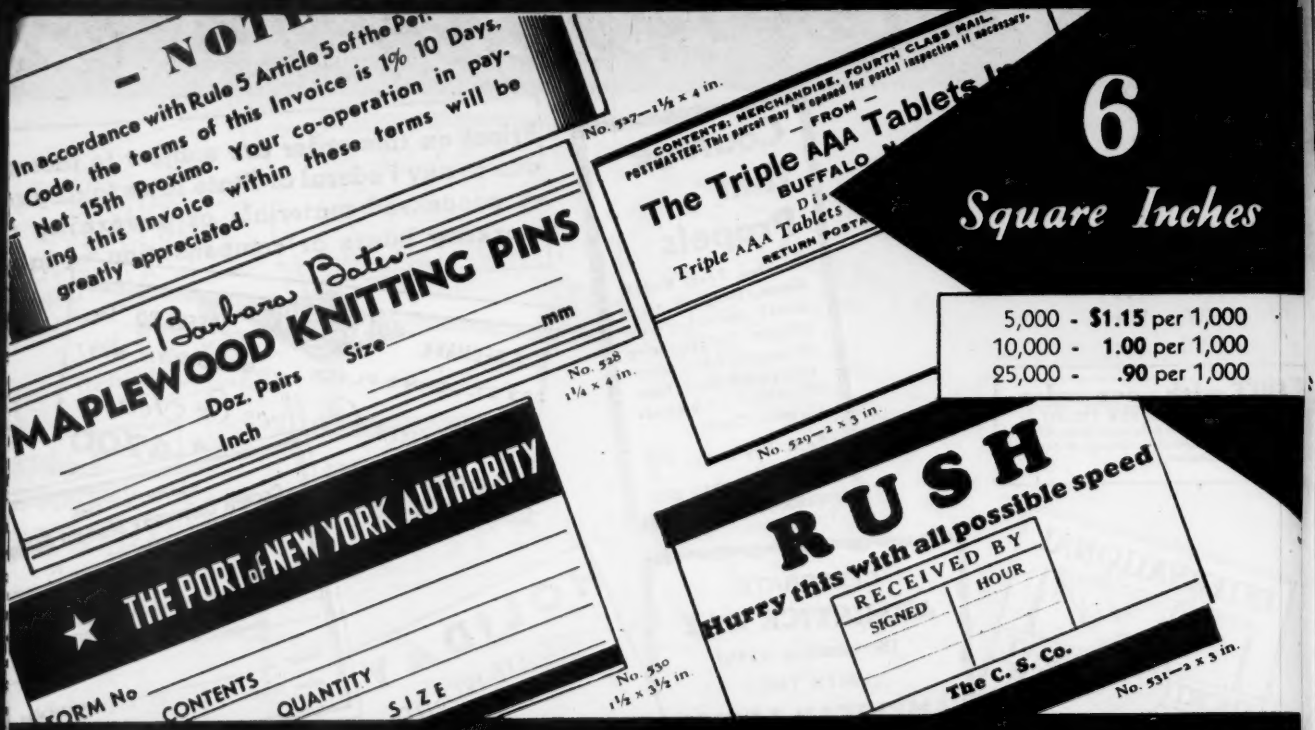
RETURN POSTAGE GUARANTEED
CONTENTS: FOURTH CLASS MAIL
POSTMASTER: This parcel may be opened for postal inspection if necessary.
COTEX CORP. ★ NEWARK, N. J.
No. 523—1¼ x 3 in.

Sample of
• Batch or Mix No.
• Package No.
• Weight
• Shipped
GENERAL ANILINE WORKS, INC.
Union County Grasselli, N. J.
No. 529—2 x 2 in.



O-Joy Jig Saw Puzzles
TITLE
No. Pieces Price
No. 526—1 x 3½ in.

ASIER TO HANDLE · QUICKER TO ADDRESS



WORLD'S NOVICE TYPING CHAMPION



ROYAL TYPEWRITER COMPANY, INC.
2 PARK AVENUE, NEW YORK CITY

The Ever Ready Label Corporation,
New York, N. Y.

Gentlemen:

In testing your label feeding device for a period of one hour against one hour's addressing of labels in the usual individual insertion manner, I found that, with this device I addressed 308 labels in the one hour and 240 feeding them individually.

This is a saving of time of 22% and I feel that, in view of the fact that I had never used this device before, a little practice with it would enable me to make this time-saving percentage even greater.

Yours very truly,
A.F. Neuenhaus
A.F. Neuenhaus,
Special School Demonstrator.

FREE
Ever Ready Roll Label Holder with first order.

10

XUM

EVER READY LABELS *Go Places—Do Things*

6
Square Inches

PAPER—white gummed or ungummed. • INK—choice of red, blue, black, green or brown. • Perforated in rolls or cut single if preferred. • Specify position of perforation if intended for typewriter use. • Second color—add 25%. • Colored paper—add 25%. • For available colors see page 47.

NAPHTHA
BEWARE OF
FLAMMABLE VAPORS
CAUTION: Do not open this bottle in any room in which there is fire or any open flame
RARITAN CHEMICAL CO.
DISTRIBUTORS
No. 533
2 x 3 in.

100,000
Labels run through Addressing Machine for Schenley's Emergency Mailing.



• FROM •
Schenley Distributors, Inc.
20 WEST 40th STREET
NEW YORK CITY
Wholesaler's Liquor License No. 119
To

INITIAL AND FORWARD
Assistant Vice President
General Copy Manager
General Information Manager
Office Manager
Supv. of Advertising Accounts
File
See pages
Return to Advertising and General Information Department
No. 535—2 x 3 in.



AIR TICKETS
— AND —
RESERVATIONS
— Call —
AIRLINES TICKET OFFICE
ROOSEVELT HOTEL (Arcade) N. Y. C.
VAnderbilt 3-0490
No. 534
2 x 3 in.
No. 536—1¼ x 3½ in.

Special for
Inspect
☐ No Starch in Shirts
☐ No Starch in Anything
☐ Collars Soft
☐ Collars Stiff
☐ Heavy Starch in C. A. Shirts
☐ Light Starch in Shirts
☐ Iron Bath Towels
☐ Dry Bath Towels
☐ Box
No. 537
2 x 3 in.

IMPERIAL
Washable
WALLPAPER
fast to light
MFD. UNDER U. S. PAT. NO 1,950,270
GLENCRAFT
No. 538—2½ x 2¼ in.

IMPORTANT
Washing Directions
for
dry-dee
WIRELESS PARTY-PAR HOLDER
and
SUN dry-dee
Make rich, luke-warm LUX suds. Never soak, unless garment is unusually soiled, then only for a short time. Squeeze suds through and through garment. Do not rub. Rinse in three luke-warm waters. Gently squeeze out water. Roll in turkish towel—knead out moisture—unroll at once—dry in shade. Do not roll up or wring. DUST WATERPROOF POCKET with TALCUM POWDER. Press with warm—NOT HOT—iron.
No. 539
3¼ x 1¾ in.

Chaperone Your Cigarettes

THEY SHOULDN'T GO OUT ALONE!
No. 543—1¾ x 3 in.

WESTCHESTER PUBLICITY ★
31 Hemingway Ave. New Rochelle, N. Y.
RETURN POSTAGE GUARANTEED
No. 540—1¼ x 4 in.

From THE JUNKET FOLKS
CHR. HANSEN'S LABORATORY, Inc. LITTLE FALLS, N.Y.
No. 542—1½ x 3½ in.

That's Cooperation!
The VOGUE Merchandising Department has planned cooperative events for many leading stores ◆ ◆ ◆ ◆
Let us submit a program to you
No. 541—1 x 3 in.

Ever Ready Labels

8 SQUARE INCHES

PROPERTY OF
Meigs County Relief Commission
NOT TO BE *sold* OR *bartered*
Unauthorized Division of Use of this Property
Punishable under the Law.

No. 544—2 x 4 in.

Samples from
Burch-Stratton Paper Co.
111 South Church Street Schenectady, N. Y.
Grade _____
Color _____
Finish _____
Size and Weight _____

No. 545—3 x 2½ in.

Ever Ready Holder
• PAPER—white gummed or ungummed.
• INK—Choice of red, blue, black, green or brown. • Perforated in rolls or cut

Borden's
99 HUDSON ST., NEW YORK, N. Y.
Postmaster: RETURN POSTAGE GUARANTEED

No. 546—2⅝ x 3¼ in.

CONTENTS MERCHANDISE
POSTMASTER: This parcel may be opened for postal inspection if necessary
If addressee has removed notify sender on FORM 3547 Postage for which is GUARANTEED
FRAGILE LIQUID
FROM: WILLIAM R. WARNER & CO
MANUFACTURING PHARMACEU
113 WEST 18TH STREET, NEW YORK
RETURN POSTAGE GUARA
To
Note—Reference Form 3547—keeps your mailing list up to date. Post Office advises you of changes at a cost of 1c each.

No. 547—2 x 4 in.

POSTMASTER — Contents: Merchandise (4th Class). May be opened for postal inspection if necessary.
FROM
LANE COMPANY
108 W. Madison Street
CHICAGO
This package is valuable. If undeliverable please return after 5 days. Postage for return will be paid on delivery to sender.
To _____

FRAGILE

No. 548—3 x 2½ in.

00 Capsules
DISULPHAMIN
(REGISTERED U. S. TRADE MARK)
GRAINS
Sulpho - Salicylo - Formol - Nucleino - Sodium Dimethylamino - Antipyrin - Bicamphorated.
• Empty contents of capsules in water as directed by Physician.
• DO NOT SWALLOW CAPSULE.
• Dispensed only on Physician's Prescription.
AMERICAN BIO-CHEMICAL COMPANY, Inc.
79 Madison Avenue New York, N. Y.

No. 549—3 x 2½ in.

RETURN IN SIX DAYS TO
Rings O' Romance
REG. U. S. PAT. OFF.
B. & E. J. GROSS CO., Inc., 64 W. 48th ST., NEW YORK, N. Y.
Registered Number
TO _____

No. 550—2½ x 3 in.

THE POST OFFICE has definite rules and regulations... Not to know them may cause needless expense.
EVER READY has secured for you an official **O. K.** on 14 Parcel Post Label Forms.
Please turn to page **44**

No. 551—2 x 4 in.

e Telephone Company measures its charge cording to the distance you speak. Ever ady's yardstick for labels is the size of the per.

Ever Ready* Roll Label *holder* FREE *with order

The Telephone Company is not interested in what you say over that distance—nor are we interested in what you print as your copy.

XUM

Ever Ready Labels

10 SQUARE INCHES

FREE with your order single if preferred. • Second color—add 25%. • Colored paper—add 25%. For available colors see page 47.

YOU RECENTLY INQUIRED ON THIS ACCOUNT—THIS AUTOMATIC RECHEC
OF YOUR EXPERIENCE IS TO PERMIT OUR ACTIVE UNDERSTANDING C
ITS PAY CONDUCT—PLEASE FILL IN AND RETURN PROMPTLY.

HIGH CREDIT RECENT	AMOUNT OWING	AMOUNT PAST DUE	TERMS	MANNER OF PAYMENT			DATE OF LAST SALE	ACCOUNT DECLINED	ACCOUNT GUARANTE
				DISCT.	PROMPT	SLOWNESS			

REMARKS

No. 552—3½ x 6 in.

JM

Johns-Manville
22 East 40th Street, New York, N. Y.

Order No.
Req. No.
FORM X-SP.C.

No. 553—3¼ x 4 in.

FULLER RADIATOR BRUSH

Genuine Fuller Products carry this Red Tip Tag and trade mark
Fuller
Look for both!

The Fuller Radiator Brush, like all Fuller personal and household products, can be bought only from the Fuller Man who brings them right to your home. To have him call, write or phone nearest branch office or
THE FULLER BRUSH COMPANY
HARTFORD, CONN.

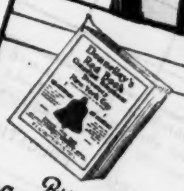
No. 554—3¾ x 2

CONTENTS: MERCHANDISE
FOURTH CLASS MAIL.
Postmaster: This parcel may be opened for postal inspection if necessary.
RETURN POSTAGE GUARANTEED

From...
PACKER MANUFACTURING CO., INC.
101 WEST 31st STREET
NEW YORK, N. Y.
Return Postage Guaranteed

No. 555—3 x 5 in.

RETURN CARRYING CHARGES GUARANTE



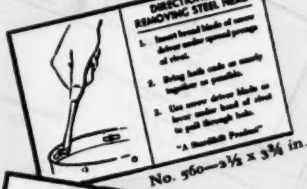
Publishers The Classified Telephone Directories

The Reuben H. Donnelley Corporation
305 East 45th St. New York, N. Y.

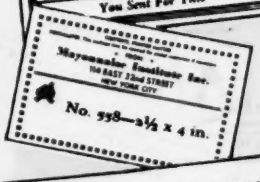
No. 556—3¼ x 4 in.

from Prudence
DELAWARE TRUST BLDG., WILMINGTON, DEL.
No. 557—2½ x 3½ in.
You Sent For This

DIRECTIONS FOR REMOVING STEEL HEAD



No. 560—2½ x 3¾ in.



No. 558—2½ x 4 in.

DOWD & MURRAY
REAL ESTATE AND INSURANCE
386 MADISON AVENUE
NEW YORK
MURRAY HILL 2-2910

No. 561—3 x 5 in.

SCHOOL THRIFT 22 East 40th Street, New York, N. Y.
MERCHANDISE

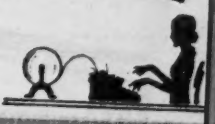
No. 559—2½ x 4 in.

WALTER T. FOSTER
ART BOOKS

No. 562—2½ x 4 in.

The National Electrical Wholesale Code of Fair Competition provides—
CASH DISCOUNTS
"It shall be an unfair trade practice for a member of the trade to allow a discount for cash on accounts remaining unpaid after the tenth of the calendar month following date of shipment."
All wholesalers are required to adhere to this rule under penalty.
VIKING PRODUCTS CORP.

No. 563—3 x 4½ in.



Remember—there must be a yardstick for every commodity. We have attempted to base ours on an intelligent application plus mass production.

Roll Labels mean Speed, Efficiency, Economy • No waste

Well suited for shipping labels, as well as fo guarantee, instruction and product-descriptio labels—to say nothing of a variety of innume able other uses.

Ever Ready LABELS

12 SQUARE INCHES

PRICES
Per Thousand
5,000 - $1.70
10,000 - 1.50

***Ever Ready* Holder**
• PAPER—white gummed or ungummed, single
• INK—Choice of red, blue, black, green 25%
or brown. • Perforated in rolls or cut

INTERNATIONAL SILK GUILD, Inc.
250 FIFTH AVENUE • NEW YORK

No. 564—3 x 4 in.

To

FROM
TECHNICAL PRODUCTS COMPANY
INSA-LUTE ADHESIVES — sauer eisen — CEMENTS COMPOUNDS
PITTSBURGH (15) PENNSYLVANIA
ORDER NO. REQ. NO. CONTENTS NO. PKGS.

TO

PLEASANTVILLE PUBLIC SCHOOL
ROSELLE AVENUE SCHOOL
FREE TEXT-BOOK LIBRARY
Number Cost
Added

No. 565
2¾ x 4 in.

CONTENTS: MERCHANDISE. FOURTH CLASS MAIL.
POSTMASTER: THIS PARCEL MAY BE OPENED FOR POSTAL INSPECTION IF NECESSARY
from
Eversweet
PRODUCTS CORPORATION
54 Fulton Street, New York, N. Y.
RETURN POSTAGE GUARANTEED
To
ORDER NO. DEPT.

No. 566—3 x 4 in.

Do not mark or deface this book. Keep it covered
Fines will be imposed for abuse of books. Books
will be denied pupils who do not take good care
of them.
BOARD OF EDUCATION

No. 567—4 x 2¾ in.

RUSH VIA
TO AMERICAN BLUE PRINT CO
49 EAST 34th ST.

No. 571—3 x 4 in.

A. G. SPALDING & BROS.
To

No. 572—3¼ x 4½ in.

PAID

No. 568—3 x 6 in.

ALWAYS
LAKE WORTH, FLA.
JUNIOR CHAMBER OF COMMERCE

No. 573—2½ x 4½ in.

CELLA BROTHERS INC.
CALIFORNIA
CHABLIS

No. 575—3 x 3½ in.

No. 569
3¼ x 4½

DONAHUE & COE, Inc.
Advertising
1790 BROADWAY
New York City
To

No. 574
3¾ x 4 in.

CHILTON CAP-LOK
DISPLAY

No. 576—2½ x 4½ in.

Don't get confused over the CURTAIN CLEANING PROBLEM!
BRIARCLIFF LAUNDRY

No. 570—4 x 3 in.

SEMMET'S
PORTFOLIO OF PICTURES

No. 577
3 x 3½ in.

THE LANDSMAN METHOD, Inc.
To

No. 578—2 x 3¼ in.

LARGEST DISTRIBUTION OF SAMPLES
This label is used by Vick Chemical Co. on 25,000,000 sample mail-outs of Vicks Sample Packages, which we believe to be the largest sampling campaign on record!

LABELS OF THESE SIZES CARRY SQUARELY INTO THE STANDARD SHIPPING, INSTRUCTION & PRODUCT CLASSIFICATIONS

ALL LABELS ILLUSTRATED ON THESE PAGES AND THROUGHOUT THE BOOK ARE FOR SUGGESTIONS ONLY.

XUM

14 SQUARE INCHES

Ever Ready LABELS

PRICES
Per Thousand
5,000 - **$1.80**
10,000 - **1.60**

FREE with your order
single if preferred. • Second color—add 25%. • Colored Papers—add 25%. For available colors see page 47.

"Ever Ready LABELS" Go Places and Do Things

To _____

No. 579—3¼ x 4 in.

RETURN POSTAGE GUARANTEED
POSTMASTER: CONTENTS: BOOK
THIS PARCEL MAY BE OPENED FOR POSTAL INSPECTION IF NECESSARY.
CANADA DRY GINGER ALE, INC.
122 EAST 42nd STREET
NEW YORK, N. Y.

Those desiring to have
FREE
CHRISTIAN SCIENCE LITERATURE
mailed to them may
fill out this slip and send to
Literature Distribution Committee
Fourth Church of Christ, Scientist
Ft. Washington Ave. and 185th St.
City of New York

Church Service
Sunday: 11 a. m. & 8 p. m.
Sunday School: 11 a. m.
Wednesday 8:15 p. m.

Reading Room
4261 Broadway at 181st Street
10 a. m. to 9:30 p. m.
Sundays: 2 to 5:30 p. m.

No. 580
4 x 3¼ in.

The Masterly Touch
for

CONTENTS: MERCHANDISE
FOURTH CLASS MAIL
POSTMASTER: This parcel may be opened for postal inspection if necessary.
From
MIDWEST BRANCH
EX-LAX INC.
445 LAKE SHORE DR.
CHICAGO · ILL.
RETURN POSTAGE GUARANTEED

FOR _____

No. 582—3 x 4½ in.

No. 581
3 x 4⅛ in.

UNDERWOOD and UNDERWOOD

No. 587
3½ x 4 in.

James A. Marshall & Company
to

MORLEN ELECTRIC COMPANY, Inc.
To

No. 583—2½ x 5 in.

No. 584—3½ x 4 in.

No. 585
3½ x 5½ in.

COLONIAL LINE
No. 586
3½ x 3½ in.

AMERICAN WEST AFRICAN LINE
WANTED VOYAGE

No. 589
3¼ x 5½ in.

30,000 CUSTOMERS TESTIFY TO OUR ABILITY TO PRODUCE AND PLEASE!

XUM

Ever Ready Labels

15
SQUARE INCHES

Ever Ready Will Gladly

Ever Ready Holder FREE with your order

• PAPER—white gummed or ungummed. • INK—Choice of red, black, blue, green or brown. • Perforated in rolls or cut single if preferred. • Second color—add 25%. • Colored Papers—add 25%. • For available colors see page 47.



Suggested Sizes

for 15 Sq. inch labels:
3 x 5
2½ x 6
2½ x 5¼
2¾ x 4¼

for 16 Sq. inch labels:
4 x 4
3½ x 4½

NATIONAL ASSOCIATION of CREDIT MEN

CONTENTS: MERCHANDISE
POSTMASTER: This parcel may be opened for postal inspection if necessary

ONE PARK AVENUE
NEW YORK, N. Y.

To

from

ATHLETIC PHARMACY
INCORPORATED
921 SEVENTH AVE. at 58th ST. NEW YORK CITY

No. 590—3 x 5 in.

CIRCLE

No. 591—3 x 5 in.

• FOR •
"RED COAL"
Telephone
SOUTH 8-1600
Ask for
RED COAL CO.

No. 594

CONTENTS: MERCHANDISE
POSTMASTER: THIS PARCEL MAY BE OPENED FOR POSTAL INSPECTION IF NECESSARY.
POSTAGE GUARANTEED

FROM
Postal Telegraph-Cable Company
360 FURMAN ST. BROOKLYN, N. Y.

To Postal Telegraph-Cable Company

No. 592—3 x 5 in.

OCTOBER

HECHT

PASSENGERS
IN THE INTEREST OF SAFETY
PLEASE SIT BACK
COMFORTABLY IN YOUR SEATS
AND KEEP HANDS CLEAR OF
OPEN DOORS.
Thank You!

No. 595

No. 596

FADA RADIO AND ELECTRIC CORPORATION
FADA

No. 597

New York Steam Corporation

No. 598

ALAN W. BOWSER
OIL EQUIPMENT AND SUPPLIES
DALLAS, TEXAS

No. 599

OVINGTON'S

No. 600

WRIGHT'S

No. 601

Advertising Matter
•
Deliver At Once
to the
ADVERTISING MANAGER

No. 593—3 x 5 in.

XUM

Solve Your Label Problems!

Ever Ready Labels

16 SQUARE INCHES

CONTENTS: MERCHANDISE. RETURN AND FORWARDING POSTAGE GUARANTEED
POSTMASTER: THIS PARCEL MAY BE OPENED FOR POSTAL INSPECTION IF NECESSARY

WESTINGHOUSE LAMP COMPANY
BLOOMFIELD NEW JERSEY

To

No. 602—3 x 3¼ in.

Typewriter Educational Research Bureau
100 East 42nd Street - - - New York

***Ever Ready* Holder FREE with your order**

• PAPER—white gummed or ungummed. • INK—Choice of red, black, blue, green or brown. • Perforated in rolls or cut single if preferred. • Second color—add 25%. • Colored Papers—add 25%. • For available colors see page 47.

All labels illustrated are merely suggestions. You may utilize any size or proportion to accommodate your own copy or arrangement.

Return

No. 603—3½ x 4½ in.

• FROM •
CALIFORNIA REDWOOD ASSOCIATION
Eastern Division
101 PARK AVENUE NEW YORK, N. Y.

No. 604—3¼ x 5 in.

FLINTKOTE
BUILT-UP ROOFING
SPECIFICATION C-3-W-S

No. 605—4 x 4 in.

SALES

No. 607

BAKELITE CORPORATION

No. 606

No. 608

Westinghouse Electric Supply Company

No. 609

PENN CENTRAL LIGHT & POWER CO

No. 610

MICHAEL OF THE WALDORF
WALDORF-ASTORIA SOUTHAMPTON L.I.
NEW YORK
KRO-KO WAVE

No. 613

This spec
Viskalt Sa
top edge
Asphalt b
Surfaced
foot. Ten

From R. H. MACY & CO
BROADWAY at 34th STREET
NEW YORK

CAMERA DEPT 5th Floor

To

THIS PACKAGE CONTAINS FILM PROCESSED TO MACY SAFETY FILM

No. 612

FALSTAFF PRESS
NEW YORK CITY

No. 611

Do Not Open
this package until all other packages of this form have been used
Then ... show this last package to the Photofinishing Department so that they may order more from the
GEO-A-DUDDY PRINTING COMPANY

No. 615

PETER HENDERSON & CO.

No. 614

No. 616

The Stirk-Shine Co., Inc.
for S. H. KRESS & CO.

IN ROLLS OR PADS

Advertising Matter
Deliver At Once

XUM

Ever Ready LABELS 18 SQUARE INCHES

No. 617

No. 618

No. 619
4 x 4½ in.

POSTMASTER: This parcel may be opened for postal inspection if necessary.

Return Postage Guaranteed.

HAGSTROM COMPANY
INCORPORATED
COMMERCIAL ART — DRAFTING — PHOTOGRAPHY
MAP MAKERS — MAP PUBLISHERS
20 VESEY STREET EST. 1916 NEW YORK CITY

No. 620—3 x 6 in.

PRICES
Per Thousand
5,000 - $2.20
10,000 - 1.85

No. 621
3½ x 5 in.

No. 622

No. 623
3½ x 5 in.

No. 624

No. 625
3 x 5½ in.

STILLWELL 4-8885
8886

U.S. CONTROL REAGENTS

U S RESEARCH

No. 626—4 x 5 in.

No. 627

No. 628—4 x 5 in.

PRICES
Per Thousand
5,000 - $2.40
10,000 - 2.00

UNITED STATES RESEARCH CORPORATION
40-35 21ST ST., LONG ISLAND CITY, NEW YORK

No. 629

No. 630

No. 631—3½ x 5½ in.

No. 632

No. 633

Stenographer	12.0 cents
Dictator	10.8 cents
Overhead	9.2 cents
Postage	3.0 cents
Printing	.6 cent
	35.6 cents

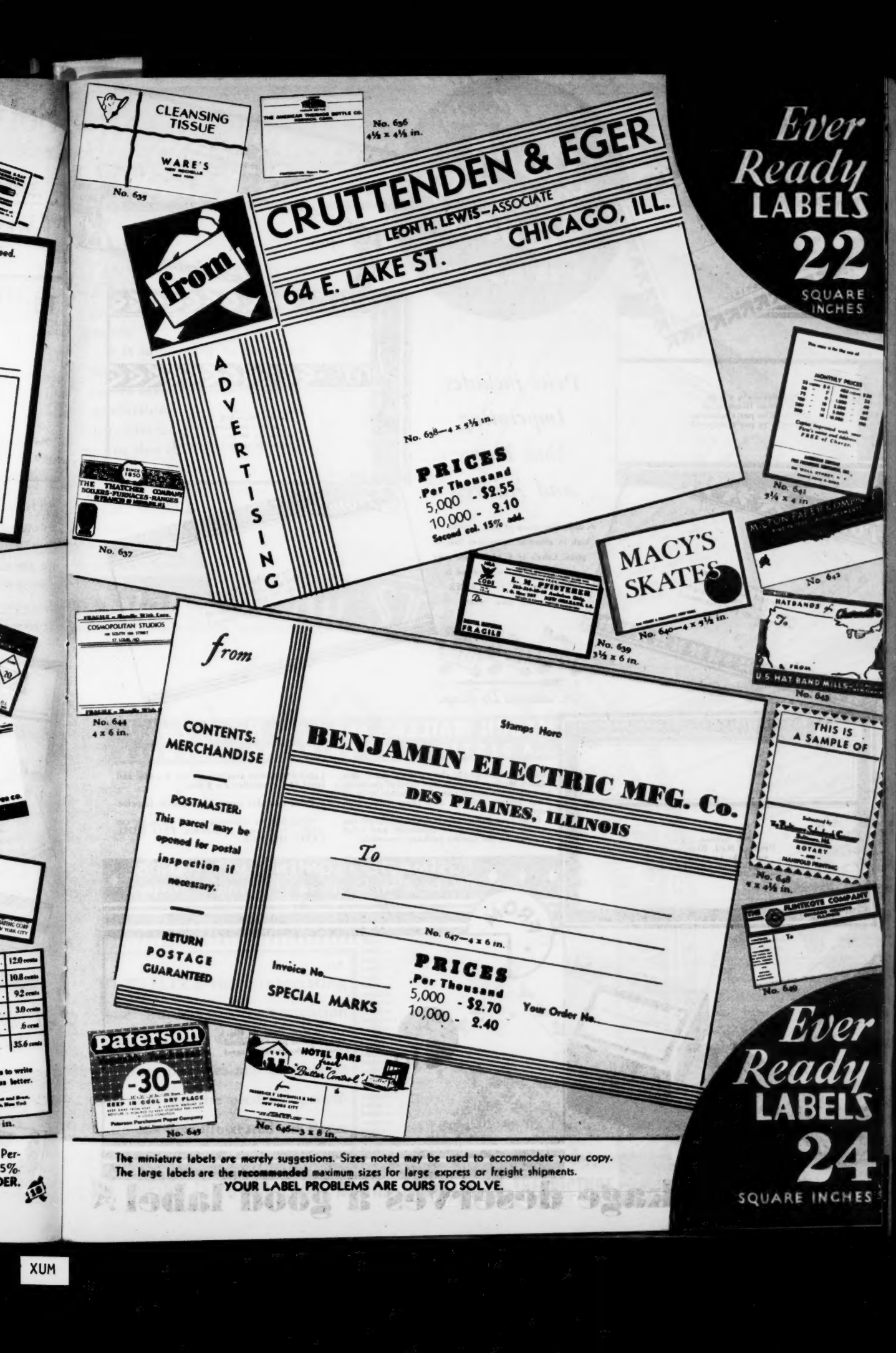
HERE'S what it actually costs to write the average business letter.

No. 634—3 x 4 in.

Ever Ready LABELS 20 SQUARE INCHES

• PAPER—white gummed or ungummed. • INK—Choice of red, blue, black, green or brown. • Perforated in rolls or cut single if preferred. • Second color—add 15%. • Colored Papers—add 15%. • For available colors see page 47. **EVER READY LABEL HOLDER FREE WITH FIRST ORDER.**

XUM


Ever Ready LABELS
22
SQUARE INCHES
CLEANSING TISSUE
WARE'S
No. 635
No. 636
4½ x 4½ in.
CRUTTENDEN & EGER
LEON H. LEWIS—ASSOCIATE
64 E. LAKE ST. CHICAGO, ILL.
from
ADVERTISING
No. 638—4 x 5½ in.
PRICES
Per Thousand
5,000 - $2.55
10,000 - 2.10
Second col. 15% add.
No. 641
5¼ x 4 in.
No. 637
MACY'S SKATES
No. 640—4 x 5½ in.
No. 642
No. 639
3½ x 6 in.
No. 644
4 x 6 in.
from
CONTENTS: MERCHANDISE
POSTMASTER: This parcel may be opened for postal inspection if necessary.
RETURN POSTAGE GUARANTEED
Stamps Here
BENJAMIN ELECTRIC MFG. Co.
DES PLAINES, ILLINOIS
To
No. 647—4 x 6 in.
Invoice No.
SPECIAL MARKS
PRICES
Per Thousand
5,000 - $2.70
10,000 - 2.40
Your Order No.
THIS IS A SAMPLE OF
ROTARY
No. 648
4 x 4½ in.
No. 649
No. 645
No. 646—3 x 8 in.
Ever Ready LABELS
24
SQUARE INCHES
The miniature labels are merely suggestions. Sizes noted may be used to accommodate your copy.
The large labels are the recommended maximum sizes for large express or freight shipments.
YOUR LABEL PROBLEMS ARE OURS TO SOLVE.

XUM

Ever Ready Stock Shipping Labels

2" x 3" to 3" x 4½"

From
To
RETURN POSTAGE GUARANTEED

No. 650—2½ x 4½ in.
Printed Red or Blue
1000—$2.50 per thousand
5000—$1.90 per thousand

No. 651—2½ x 4 in.
Colors as Illustrated
1000—$3.00 per thousand
5000—$1.75 per thousand

No. 653—3½ x 4½ in.
Printed Red or Blue
1000—$3.00 per thousand
5000—$1.70 per thousand

For

No. 654—2½ x 4 in.
Colors as Illustrated
1000—$4.00 per thousand
5000—$1.90 per thousand

Price includes Imprinting Your Name and Address

A distinctive group of stock designs . . . high in attention value, yet low in price. Labels in 1 M lots are cut single. In 5 M lots furnished in roll form. FREE HOLDER with roll label order.

Ever Ready LABELS
Go Places and Do Things

From

No. 652—2½ x 4 in.
Printed Red or Blue
1000—$2.50 per thousand
5000—$1.40 per thousand

© EVER READY LABEL CORP. N. Y. C.

From
POSTMASTER • CONTENTS MERCHANDISE
This parcel may be opened for inspection if necessary.

No. 655—2½ x 4½ in.
Printed Red or Blue
1000—$2.75 per thousand
5000—$1.60 per thousand

© EVER READY LABEL CORP. N. Y. C.

From
POSTMASTER • CONTENTS MERCHANDISE
This parcel may be opened for inspection if necessary.

For

No. 656—2 x 3 in.
Printed Red, Blue or Black
5000—$1.15 per thousand
10000—$1.00 per thousand

MASON MAILERS and *Ever Ready Labels*
...A DISTINCTIVE SHIPPING ENSEMBLE

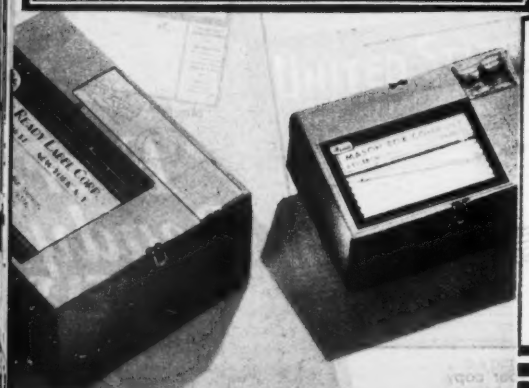
Shippers throughout the country agree that Mason Modern Mailers take most of the work and all of the worry out of shipments by mail. They reduce postage and carry articles in perfect safety.

Only Ever Ready labels could complete the perfect combination of container and label . . . making the perfect package ensemble.

Label 656 is also available in size 3 x 4½, and label 657 in smaller 2 x 3 size.

Price includes name and address imprint.

Furnished in convenient roll form or cut single. State your preference. FREE ROLL LABEL HOLDER.



POSTMASTER • CONTENTS MERCHANDISE
This parcel may be opened for inspection if necessary.

FROM

To

No. 657—3 x 4½ in.
Printed Red, Blue or Black
5000—$1.80 per thousand
10000—$1.60 per thousand

A good package deserves a good label

XUM

Effective Designs Become Doubly Effective When Printed on Tinted Paper Stock

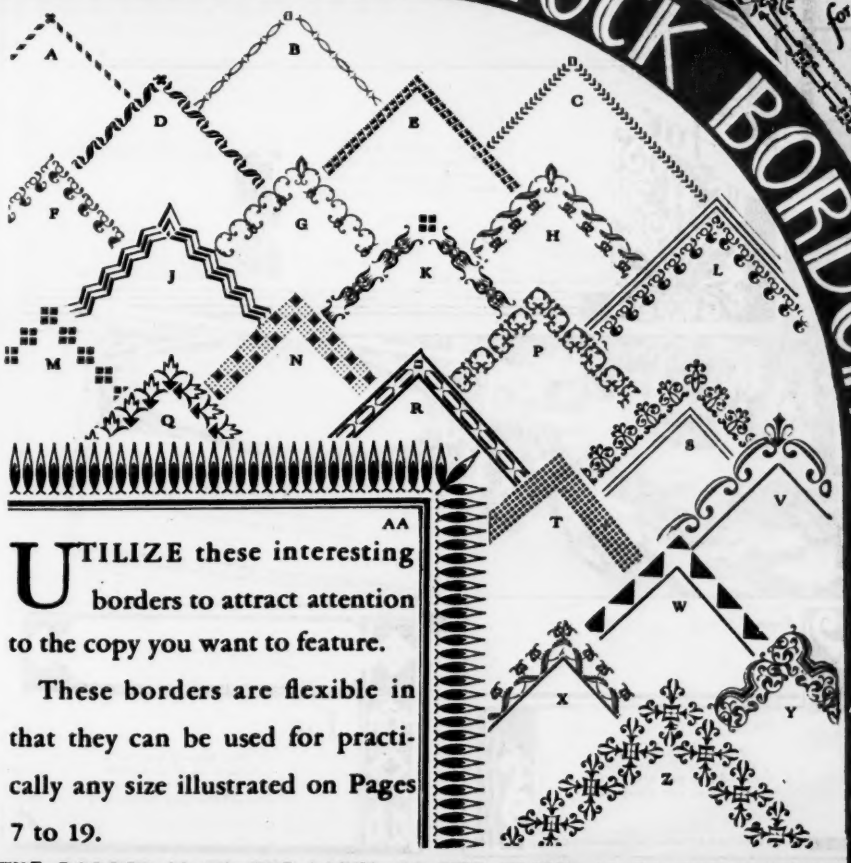
ANY label will change its appearance completely when printed on colored gummed paper.

It is impossible to show on these pages the wide range of colors available; nor do the reproductions do justice to the attractive tints.

For that reason we have prepared a sampler of colored stocks, showing colors and prices of Ever Ready's gummed labels.



Ever Ready STOCK BORDER DESIGNS



UTILIZE these interesting borders to attract attention to the copy you want to feature.

These borders are flexible in that they can be used for practically any size illustrated on Pages 7 to 19.

THE BORDER IS TO THE LABEL AS THE FRAME IS TO THE PICTURE

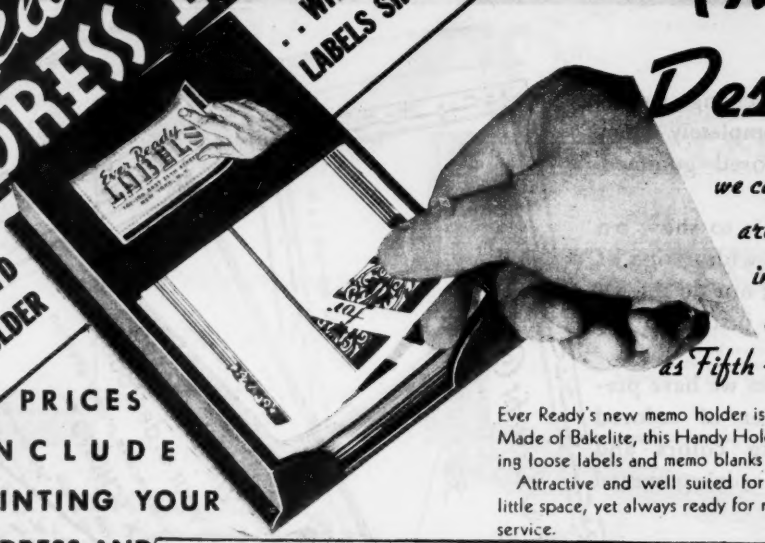


DECORATIVE DISTINCTIVE DESIGNS

Ever Ready STOCK ADDRESS LABELS

. . WITH YOUR ORDER FOR LABELS SHOWN ON THIS PAGE

FREE LABEL AND MEMO HOLDER



PRICES INCLUDE IMPRINTING YOUR NAME, ADDRESS AND BUSINESS CARD

Fifth Avenue Designs,

we call them . . . all are as outstanding, as modern, as progressive as Fifth Avenue itself.

Ever Ready's new memo holder is a gem of handiness. Made of Bakelite, this Handy Holder is ideal for holding loose labels and memo blanks as large as 3" x 5".

Attractive and well suited for the desk—takes up little space, yet always ready for rapid and continuous service.

CONTENTS MERCHANDISE
POSTMASTER
This parcel may be opened for postal inspection if necessary
RETURN POSTAGE GUARANTEED

For

No. 663—3 x 5 in.
Printed Red or Blue
1000—$3.00 per thousand
5000—$1.90 per thousand

For

No. 664—3 x 5 in.
Printed Red or Blue
1000—$3.75 per thousand
5000—$2.10 per thousand



No. 664 Available also in this style.

© EVER READY LABEL CORP. N. Y. C.

From
To

No. 665—3 x 5 in.
Printed Red or Blue
1000—$3.00 per thousand
5000—$1.90 per thousand



From
To

No. 667—3 x 5 in.
Printed Red or Blue
1000—$3.00 per thousand
5000—$1.90 per thousand

For

No. 666—3 x 5 in.
Printed Red or Blue
1000—$3.00 per thousand
5000—$1.90 per thousand

From

For

No. 668—3 x 5 in.
Colors as Illustrated
1000—$4.00 per thousand
5000—$2.50 per thousand

RETURN POSTAGE GUARANTEED

For

No. 669—3 x 5 in.
Colors as Illustrated
1000—$4.00 per thousand
5000—$2.50 per thousand

All labels illustrated on this page may also be had in a convenient roll form, if desired and specified.

XUM

READILY ADAPTED TO YOUR BUSINESS

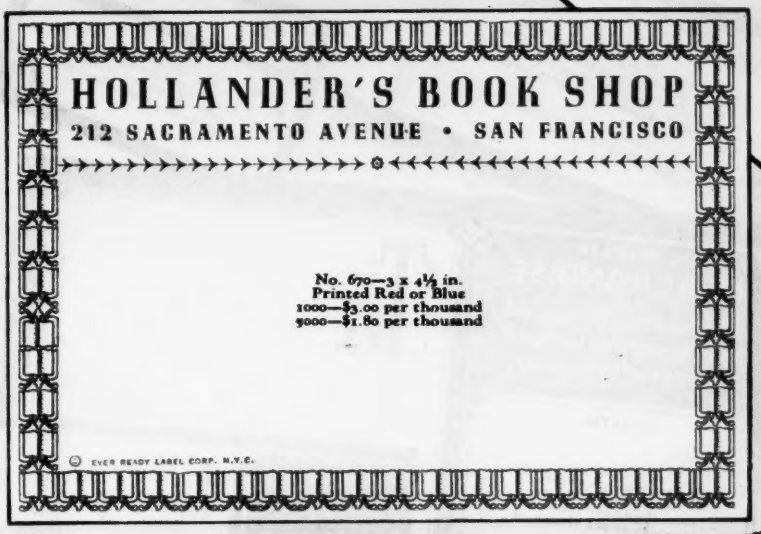
STYLED BY EXPERTS (LEE & PHILLIPS, Inc., of New York)

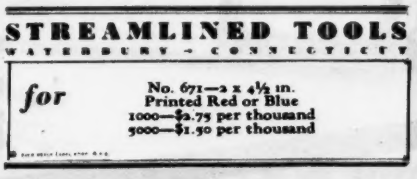
Ever Ready INTERPRETIVE DESIGNS

STOCK ADDRESS LABELS

Each label design on this page is made to interpret a very definite feeling that characterizes a particular line of business activity. These labels will create an immediate impression of quality in the eyes of your customers. Labels in 1M lots are cut single. In 5M lots—furnished in roll form. FREE HOLDER with roll label order.

These designs are available to you at no added cost . . . there is no extra charge for imprinting your name and address.

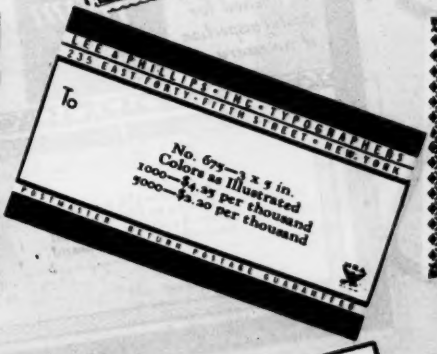








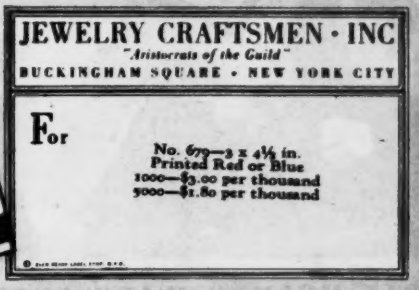












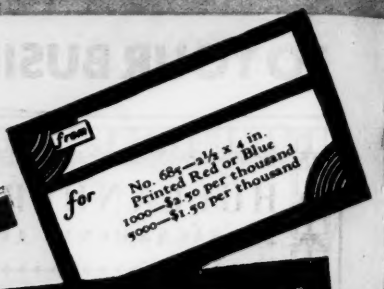
AN ENDLESS VARIETY OF DESIGNS STOCK LABE



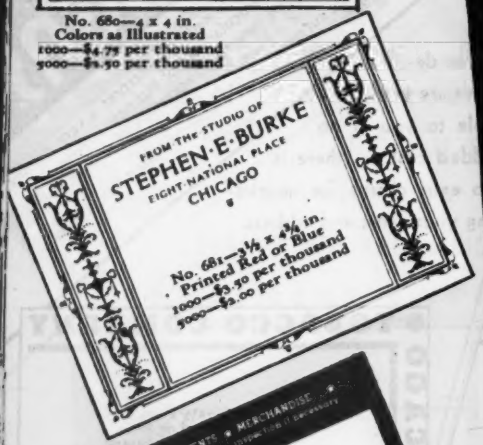
No. 680—4 x 4 in.
Colors as Illustrated
1000—$4.75 per thousand
5000—$4.50 per thousand



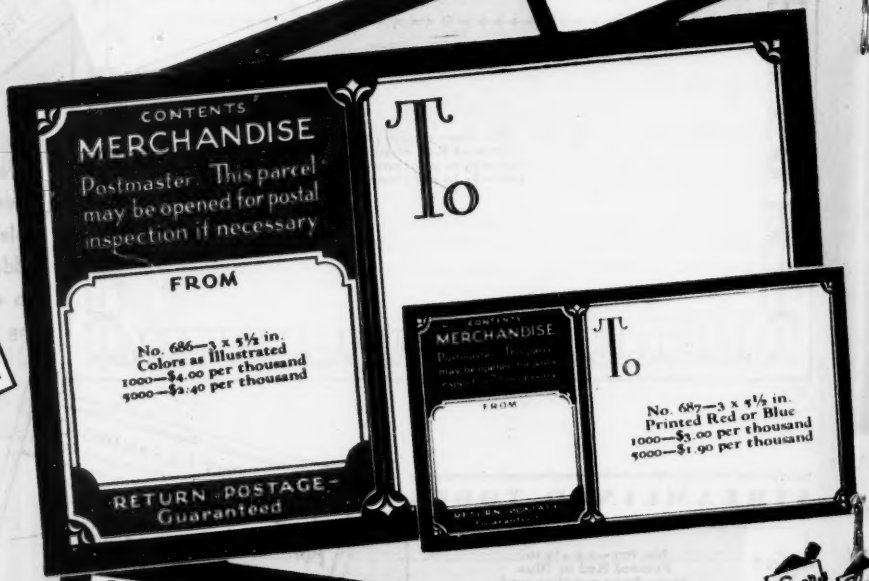
No. 684—3 x 5 in.
Printed Red or Blue
1000—$3.00 per thousand
5000—$1.70 per thousand



No. 684—2½ x 4 in.
Printed Red or Blue
1000—$2.50 per thousand
5000—$1.50 per thousand

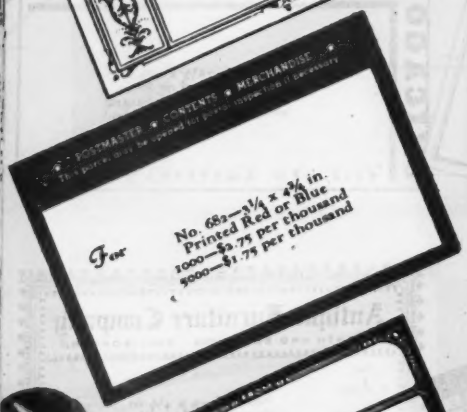


No. 681—3½ x 4¾ in.
Printed Red or Blue
1000—$3.50 per thousand
5000—$2.00 per thousand



No. 686—3 x 5½ in.
Colors as Illustrated
1000—$4.00 per thousand
5000—$2.40 per thousand

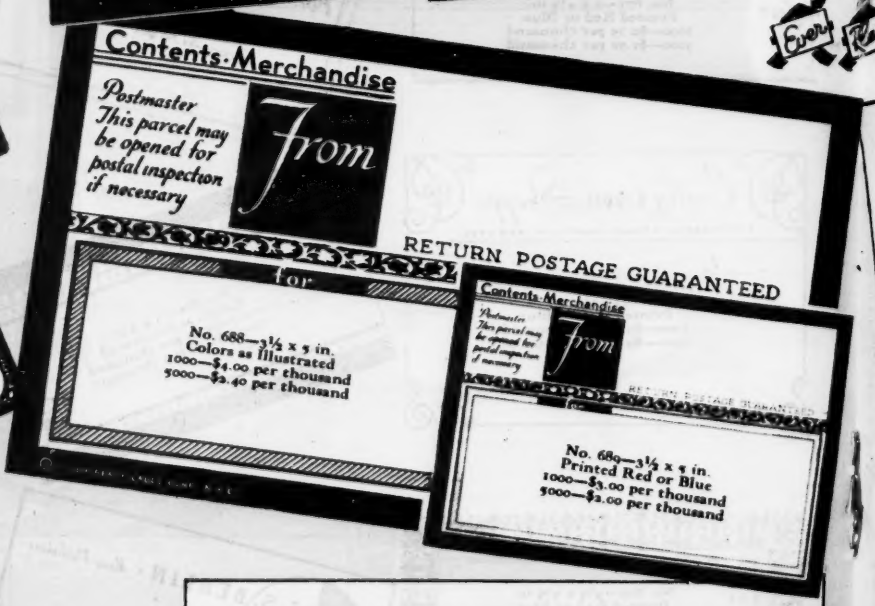
No. 687—3 x 5½ in.
Printed Red or Blue
1000—$3.00 per thousand
5000—$1.90 per thousand



No. 682—3¼ x 4¾ in.
Printed Red or Blue
1000—$3.75 per thousand
5000—$1.75 per thousand



No. 683—2½ x 4 in.
Printed Red or Blue
1000—$2.00 per thousand
5000—$1.30 per thousand



No. 688—3½ x 5 in.
Colors as Illustrated
1000—$4.00 per thousand
5000—$2.40 per thousand

No. 689—3½ x 5 in.
Printed Red or Blue
1000—$3.00 per thousand
5000—$2.00 per thousand



REE HOLDER WITH EVERY ORDER FOR ROLL LABELS

PRICES INCLUDE IMPRINTING YOUR NAME AND ADDRESS

Get away from the conventional type of shipping labels—TWENTY THREE designs offer this opportunity.

Furnished in convenient roll form or cut single, with or without guide lines —state your preference.

COPYRIGHTED 1935 BY EVER READY LABEL CORPORATION, N.Y.C.

XUM

ABEL DESIGNS A COMPLETE RANGE OF SIZES



XUM

Speed up your mailing with ver Ready Gummed Labels

24 on a sheet

Efficient Letter Co., Inc.
141 East 25th St.
New York, N. Y.

actual size

those using direct mail, these labels are time and ney savers—permitting rapid addressing and making any as three or four copies **at a time**—24 addressed **ime a sheet is inserted into machine.** More speed—ease in handling! • Handy too for making lists to be d to file cards or records—for addressing large cata- velopes that cannot be fed through the typewriter.

PRICES

3,000 labels	(125 sheets)	$.60 per 1,000	
6,000 "	(250 ")	.50 "	"
12,000 "	(500 ")	.45 "	"
24,000 "	(1000 ")	.40 "	"
48,000 "	(2000 ")	.30 "	"

Labels are gummed on one side. • Size of label is 2¾" x 1⅜". • Size of sheet is 8½" x 11". • 24 perforated labels on a sheet. FREE SAMPLE SHEETS.



Indispensable for follow-up systems and flexible for varied uses where business depends on direct mail and mail lists.



Dr. Wm. Seaman Bainbridge
34 Gramercy Park
New York, N.Y.



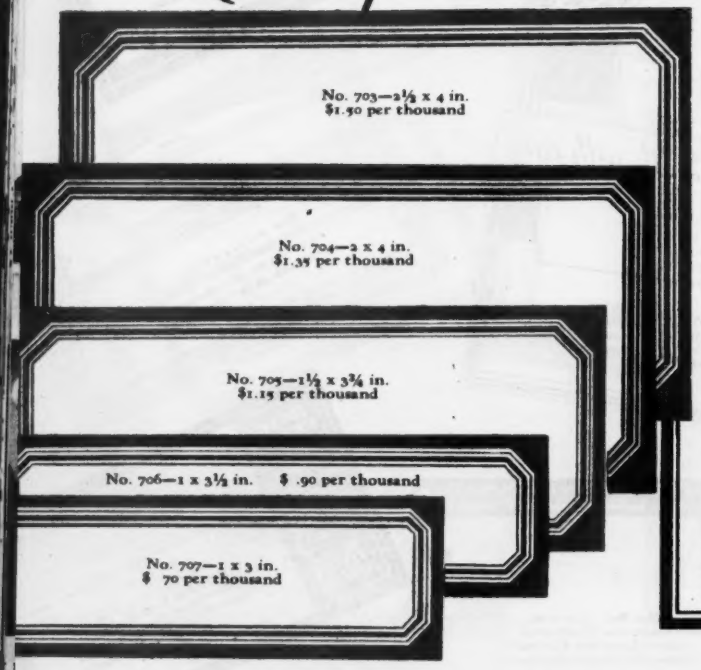
Speed-o-Rol Address Labels

1 x 3 blank gummed labels—run through typewriter in a continuous strip—excellent for rapid addressing and rapid affixing to packages, envelopes, etc. Used also on file folders.

5,000 - - **$ .50** per 1,000
10,000 - - **.40** " "
25,000 - - **.30** " "

Quantity Prices for Quantity Mailers

ver Ready STOCK LABELS



BLANK and IMPRINTED

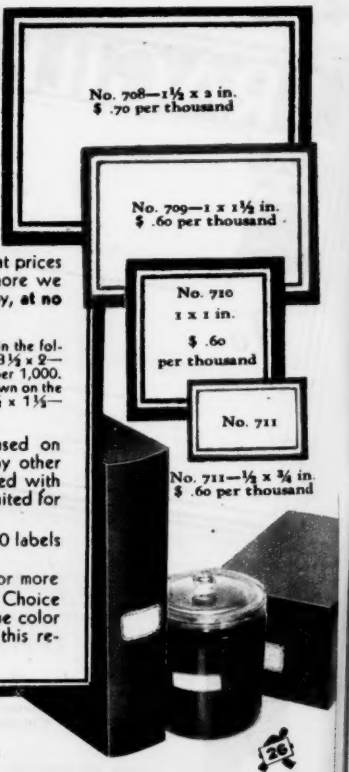
Labels illustrated here (choice of red or blue border) furnished in lots of 1,000 or more at prices indicated. In lots of 5,000 or more we will include your imprint or copy, **at no added cost** (all red or all blue).

Labels shown on left are also available in the following sizes: 4 x 1—**$.90** per 1,000. • 3½ x 2—**$1.35** per 1,000. • 4½ x 2½—**$1.70** per 1,000. • Other sizes carried in stock in style shown on the right are: 2 x 2—**$.90** per 1,000. • 2½ x 1½—**$.90** per 1,000.

These stock labels may be used on wood, glass, cardboard, and any other type of container. May be printed with any copy you wish. Excellently suited for private labels and office forms.

Delivered in rolls or flat—1,000 labels to roll.

Remember—in lots of 5,000 or more you pay **nothing extra** for printing. Choice of red or blue borders, with same color printing. NO ONE else offers this remarkable value.



XUM

Customers Think Your Way—And Pay—When You Use Ever Ready Collection Stickers




No. 712


No. 713


No. 714

This series printed in Red and Blue on gummed SILVER pap

The colorful results are strikingly effective . . . Samples will be cheerfully sent f


No. 715



No. 718



No. 720



No. 722


No. 724


No. 716

Actual Size 1 3/4 x 2 1/2



No. 725


No. 717



No. 719


No. 721



No. 723



No. 726

TESTED ACTION PRODUCERS

REPEATEDLY USED AND ENDORSED BY CREDIT M

Outstanding Credit Men testify to the fact that the 70 smart, attractive, colorful and epigrammatic stickers shown on the following pages are effective for the job they are planned to do. The carefully planned letter of the Credit Man and the conservative correspondent, relative to "Big Business" is thoroughly respected by us, yet, our experience by demand from thousands of customers, indicates that in the larg centage of cases, a gentle nudge or slight hint, will the creditor to action, and retain that most valuable asset—Good Will • This assortment is prompted beca personal approach to every particular customer is a some thought and the proper application of the correc

SOLD IN UNITS OF 100 (100 to the pad of one design)	
1,000 assorted	$4.00
5,000 " per 1,000	3.50
10,000 " " "	3.00

XUM

Ever

COLLE

STIC



No. 727



No. 728



No. 729



No. 730



No. 731



No. 732



No. 733



No. 734



No. 735



No. 736



No. 737



No. 738

Ever Ready GOLDEN RULE STICKERS

"Do unto others as you would have them do unto you." A profound phrase with real philosophy back of it.

Ever Ready has turned the solemnity into humor—but the iron-clad philosophy remains, in this strictly original series.

They are yours for snappy, yet dignified collections. Stand out impressively on any style or color letterhead. These are genuine action-compelling stickers that do not beg or threaten but do educate your customers to the advantages of prompt payment. Golden Rule stickers printed on a gummed stock that looks like 14 karat gold. They've been tested on thousands of accounts and proved effective on both large and small amounts. Sold in quantities of 1000 or more, 100 stickers to the pad.

Nos. 751-761 Printed in Brilliant Blue Black on Gold Stock, **$3.00 per thousand.**
Actual Size 1½" x 2¼".
Nos. 762-767 Printed in two colors, Brilliant Blue Black and Red on Gold Stock, **$4.50 per thousand.**
Actual Size 2¼" x 3¼".

TRY THEM ON YOUR NEXT STATEMENTS

Deduct 15% from total price if you buy 5000 (one kind or assorted).
Deduct 25% from total price if you buy 10,000 (one kind or assorted).





No. 745

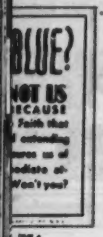

751



No. 752



No. 753



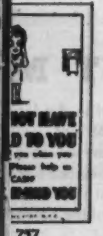
754



No. 755



No. 756



757



No. 758



No. 759

GOLDEN RULE COLLECTION

Complete description and prices of Golden Rule collection stickers will be found in the panel above labels 752 and 753.



No. 760

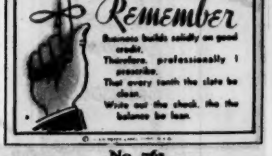
Labels Nos. 731 to 761 are size 2¼ x 1½.
Labels Nos. 762 to 767 are size 2¼ x 3¼.



No. 761



No. 762



No. 763



No. 764 © EVER READY LABEL CORP. N.Y.C.

XUM

Ready ACTION KERS





No. 739



No. 740



No. 741



No. 742



No. 743



No. 744



No. 745



No. 746



No. 747



No. 748



No. 749



No. 750

All "Ole Bill" STICKERS THIS SIZE

"OLE BILL" COLLECTS OLD BILLS!

Meet "Ole Bill," the genial bookkeeper, who, with subtle humor and homely philosophy urges the signing of the check by striking the funny bone, and with smiles and laughter awakens those action nerves. "Ole Bill" collection stickers are being used effectively by well known mercantile houses, manufacturers, retailers and professional men. They are inexpensive. There are twenty-four slogans. You select the one that best fits your case and Presto! —before you know it, collections start coming in. Twelve hundred "Ole Bill" stickers come in a handy bookkeeper's box (note illustration at left)—made to hold twelve pads. Each pad contains 100 gummed "Ole Bill" stickers. All are printed in three vivid colors—yellow, red and blue. There are twenty-four to select from. You make your own assortment.

WE MAKE THIS OFFER

Let us send you YOUR ASSORTMENT of "Ole Bill" for $3.50. Pick out the styles you like best and try them immediately. If you get no results and no favorable comments, return the balance and with no questions asked we'll return your remittance.

Price Per Box 1200 Labels
12 pads—100 stickers each
$3.50

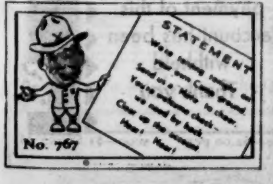
STICKERS



No. 765



No. 766



No. 767

Sampler Package

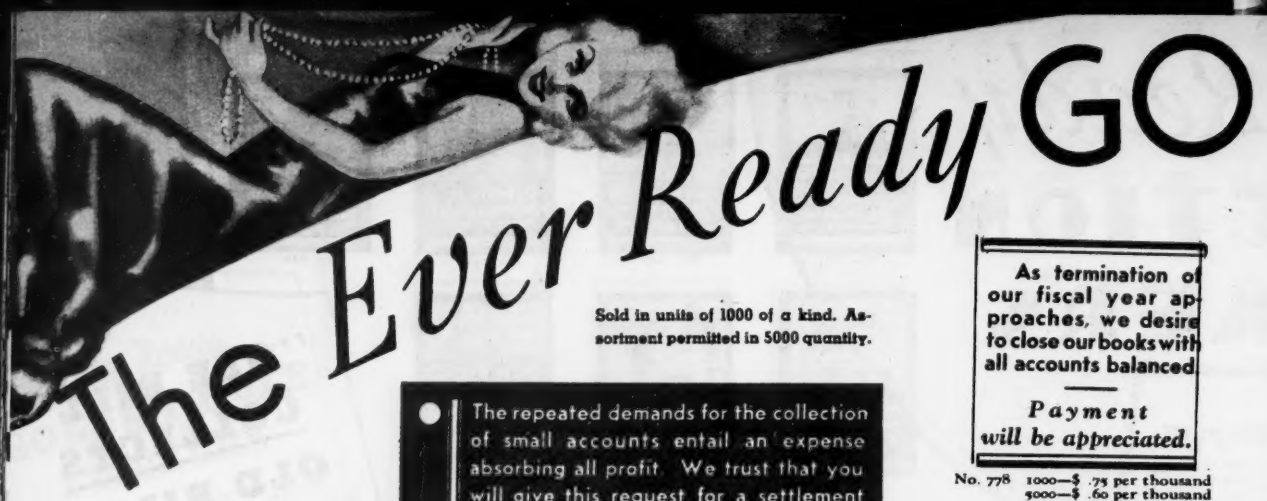
100 COLLECTION STICKERS for 25¢



To Skeptics—

you who hesitate to buy before you try—we offer Ever Ready's Sampler (as illustrated). 100 colorful and interesting stickers to contact delinquent accounts—The bad boys on your list. Send 25c—try 'em—use 'em—then buy 'em in quantity.

XUM



The Ever Ready GO

Sold in units of 1000 of a kind. Assortment permitted in 5000 quantity.

EXPERIENCE HOWS THAT HEY PRODUCE RESULTS

"Successful business demands prompt collections and prompt payment. We request prompt payment in the same courteous manner we solicit your trade. Both are necessary for our success".

768 1000—$2.00 per M 5000—$1.25 per M

We are still looking for your check to cover our statement of_____ for $_____ We feel sure that we can count on you for a remittance by return mail.

769 1000—$2.00 per M 5000—$1.25 per M

THE LAST MAIL
Has Arrived
We were disappointed because of your failure to send a remittance to cover our statement of_____ for $_____
We must insist on a check by return mail.

770 1000—$2.00 per M 5000—$1.25 per M

The repeated demands for the collection of small accounts entail an expense absorbing all profit. We trust that you will give this request for a settlement of your account immediate attention.

No. 771 1000—$1.00 per M 5000—$ .75 per M

THIS ACCOUNT
NOW PAST DUE
has probably been overlooked
WE WOULD APPRECIATE
YOUR EARLY REMITTANCE

No. 772 1000—$1.00 per M 5000—$ .75 per M

We want you to know
that
YOUR PATRONAGE HERE
IS APPRECIATED

No. 773 1000—$1.00 per M 5000—$ .75 per M

★ This account has apparently been overlooked. May we remind you that it IS due and that you should remit promptly

No. 774 1000—$1.00 per M 5000—$ .75 per M

WE HAVE BEEN WAITING TO HEAR FROM YOU ON THIS ACCOUNT IF NOT CONVENIENT TO SETTLE IN FULL AT THIS TIME A PARTIAL PAYMENT WILL BE APPRECIATED.

No. 775 1000—$1.00 per M 5000—$ .75 per M

OUR CREDIT IS GOOD
BECAUSE YOU PAY YOUR ACCOUNT HERE PROMPTLY
THANK YOU

No. 776 1000—$1.00 per M 5000—$ .75 per M

IF THERE IS ANY REASON WHY THIS ACCOUNT SHOULD NOT BE PAID WITHOUT FURTHER DELAY, KINDLY INFORM US.

No. 777 1000—$1.00 per M 5000—$ .75 per M

As termination of our fiscal year approaches, we desire to close our books with all accounts balanced.
Payment will be appreciated.

No. 778 1000—$ .75 per thousand 5000—$ .60 per thousand

We are required to report all past due accounts to our local credit bureau. An early payment protects your interest.

No. 779 1000—$ .75 per thousand 5000—$ .60 per thousand

PAST DUE!
Please favor us with a remittance by return mail
Thanks

No. 780 1000—$2.00 per M 5000—$1.25 per M

All *charges are made on a 30-day basis Please!*

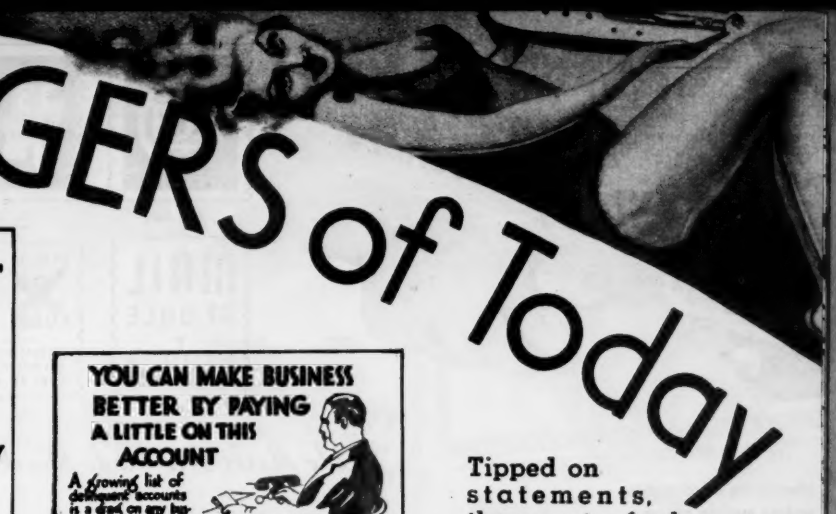
No. 781 1000—$2.00 per M 5000—$1.25 per M

Won't you please tell us if there is reason why payment of this account has been withheld.
Thank you

No. 782 1000—$2.00 per 5000—$1.25 per M

XUM

LD DIGGERS of Today



Just now the Bookkeeper said, "Don't they ever pay their bills?" My chin dropped.

After all, we served and satisfied.

Aren't we entitled to kind consideration?

Please justify my faith in you by mailing a check today.

Cordially yours,

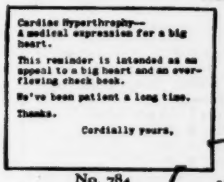
U-Sign-Here

No. 783

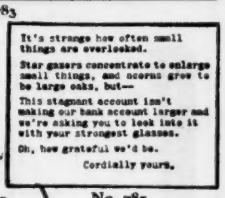
Tipped on statements, these spots of color center attention and cry out your request.



No. 790 1000—$2.00 per M
5000—$1.00 per M

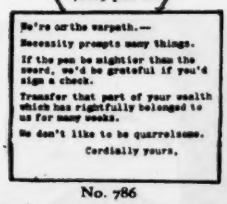


No. 784



No. 785

1000 $2.00
5000 $1.25 per M



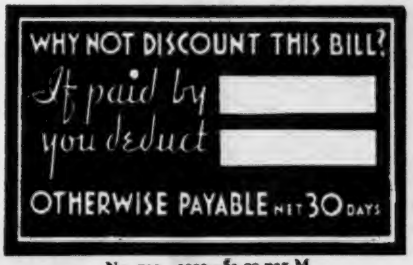
No. 786



No. 791 1000—$2.00 per M
5000—$1.00 per M



No. 793 1000—$3.50 per M
5000—$2.00 per M
Black on



No. 792 1000—$2.00 per M
5000—$1.00 per M



No. 794 1000—$3.50 per M
5000—$2.00 per M
Black on



No. 787 1000—$1.00 per M 5000—$ .75 per M

MOONSHINE TWINS

Ever Ready Quality

Embossed Good-Will Sea

3000 Assorted—$4.00

There never was a product made
(The truth we must confess)
But what some Bird could make it worse
And sell his stuff for less.

No. 788 1000—$1.00 per M 5000—$ .75 per M



"Before"

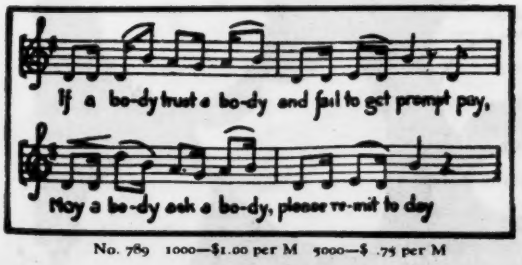
No. 795
1000—$ .75



No. 797
1000—$1.50



No. 798
1000—$1.50



No. 789 1000—$1.00 per M 5000—$ .75 per M

"After"

No. 796
1000—$ .75



Black on Yellow



No. 799
1000—$1.50
Green on Wh



identifying merchandise
sealing mailing pieces
attaching post cards to mailing pieces

ER READY makes Dummy Stamp-Stick-rs—exactly the same size as U. S. ostage Stamps, for use in stamp affixing es, such as the Standard Stamp Affixer, ail-O-Meter, and similar machines. idly adapted for sealing direct mail re, for identifying merchandise by ark, for pricing and recommended rapid application is important.



"Trade Marks Are Trade Sparks"



No. 808



No. 809

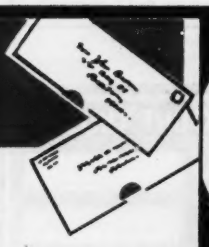


BLANK stamp-stickers now carried in stock in following colors: white, black, red, yellow, blue, green, pink, orange and brown.

5,000 at	$ .50	per 1,000
10,000 "	$ .40	" "
25,000 "	$ .30	" "
50,000 "	$ .25	" "

Ask for special quotation on printed stamp-stickers and quantity requirements.

DIECUT UTILITY CKERS and SEALS



R marking and pricing—for sealing circulars, oadsides, folders—to attach reply cards—swatches—for innumerable practical pur-Hundreds of other shapes are carried on or instant delivery. If you don't see what ant here, ask for samples, and consult us on l needs.

PRICES WITHOUT PRINTING

(All prices are per thousand)

ZE	WHITE GUMMED			WATERPROOF COLORS*			GOLD & SILVER NON-TARNISHABLE		
	5,000	10,000	25,000	5,000	10,000	25,000	5,000	10,000	25,000
eter r less	$ .25	$ .20	$ .18	$ .30	$ .25	$ .22	$ .50	$ .40	$ .35
eter or less	.35	.28	.24	.45	.35	.30	.70	.60	.54
eter r less	.50	.40	.34	.60	.45	.40	1.05	.95	.85

s available: Red, Orange, Yellow, Green, Blue, Brown, Black and pastel shades.

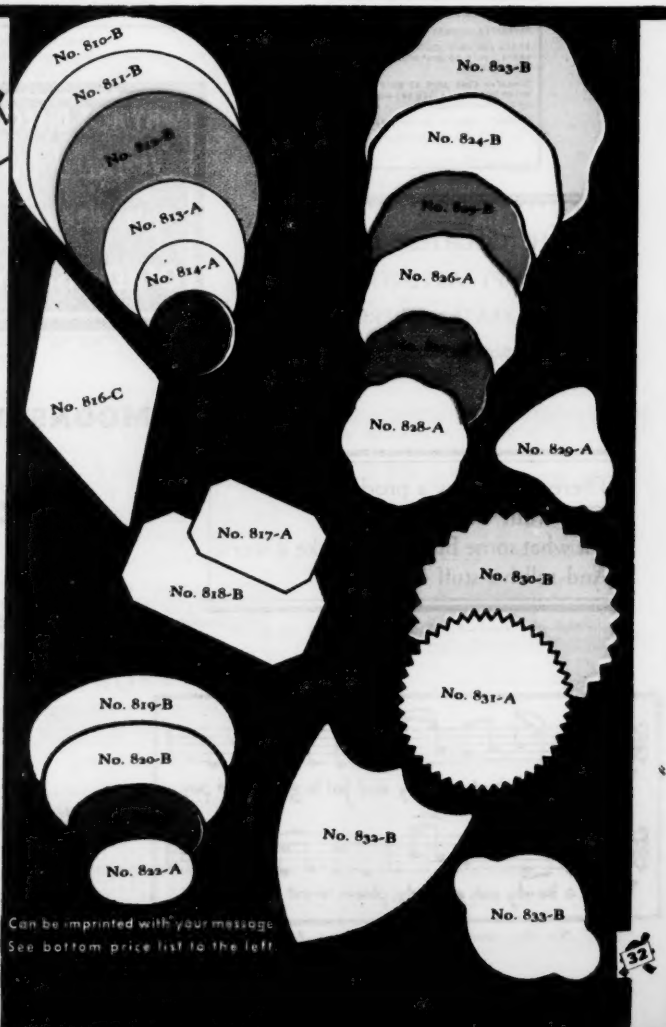
PRICES WITH PRINTING

(All prices are per thousand)

ZE	WHITE GUMMED			WATERPROOF COLORS*			GOLD OR SILVER NON-TARNISHABLE		
	5,000	10,000	25,000	5,000	10,000	25,000	5,000	10,000	25,000
eter r less	$1.00	$ .75	$ .64	$1.25	$ .90	$ .75	$1.50	$1.20	$ .95
eter or less	1.15	.95	.78	1.35	1.10	.90	1.75	1.40	1.20
eter r less	1.30	1.00	.85	1.50	1.30	1.05	2.25	1.75	1.40

ors available: Red, Orange, Yellow, Green, Blue, Brown and pastel shades.

IAL PRICES IN LARGER QUANTITIES

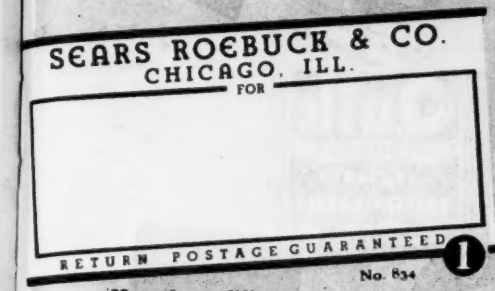


Can be imprinted with your message
See bottom price list to the left

XUM

Ever Ready REVERSE PLATE and hand lettered labe

SHOWING THE EVOLUTION FROM THE SIMPLE TO THE DISTINCTIVE LABEL



No. 834





No. 835



Note three different presentations of the same label.

Note that the contents of all three labels shown above are identical, yet the treatments are entirely different.

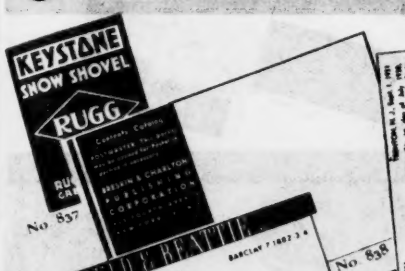
1. This label printed from stock type set in straight lines, the borders made from stock rules.
2. This label is the same as No. 1—except reversed and requiring a cut.
3. A hand drawn label—main elements derived from artist's handiwork—requiring both art work and cut.

No. 1 Price same as other 6 sq. in. labels. 5 M at **$1.15**—10 M at **$1.00**

No. 2 cost of cut is **$3.00**—Printing of labels same as No. 1

No. 3 cost of drawing and cut **$6.50**—Printing of labels same as No. 1

3 No. 836

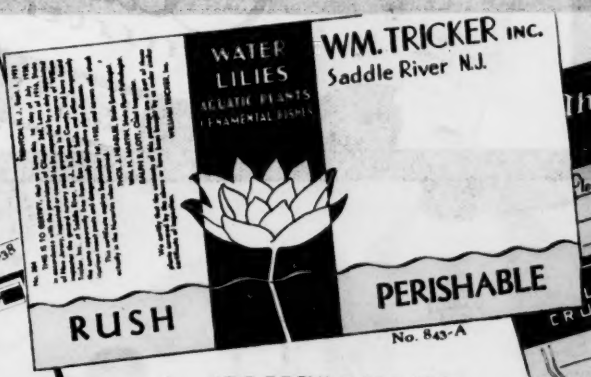


No. 837



No. 838

No. 839



No. 843-A



No. 845

No. 846

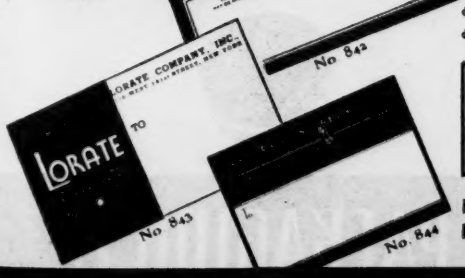


No. 847



No. 841

No. 842



No. 843

No. 844

A "PLUS" VALUE

LABELS shown here indicate the possibilities for featuring trade marks, individual and distinctive designs, thereby securing "plus" advertising value in conjunction with the practical purpose of your label.

Our facilities enable us to create such artistic and distinctive designs. Their advertising value will prove effective long after the first cost has been paid and forgotten.

THE COST of Hand Lettered and Reverse Plate labels is figured on the square inch basis, as other Ever Ready Labels. The only difference is the first cost of art work and plates—and such drawings and plates become your property after order is completed. *We ask you to pay for these drawings and cuts on the first order only.*

COST NO MORE THAN ORDINARY LABELS after you pay initial low cost of drawing and cut, which are CHARGED AT COST.

No. 840—Drawing and plate cost about . .	$5.50
No. 841—Drawing and plate cost about . .	$6.00
No. 851—Drawing and plate cost about . .	$9.50
No. 838—Plate cost about	$5.00

NO DRAWINGS REQUIRED FOR REVERSE LABELS FROM TYPE—ONLY CUT IS NECESSARY



No. 849

No. 851

THEIR ADVERTISING VALUE REMAINS LONG AFTER THE COST IS FORGOTT



Ever Ready LABELS FOR PACKAGING &

XUM



THE large manufacturer of nationally
tised products calls in packaging and
experts whose fees run into three o
figures.

Ever Ready doesn't pretend to off
service, but the experience gained by handlin
or more problems daily, naturally flows to th
vantage of the small and medium sized ma
turers and packers.

In short, Ever Ready makes it possible for a
tively small business to buy a fine looking pa
label at a price that eliminates all the frills and
charges—a price it can afford to pay.

"How can Ever Ready do **that?**" you'll ask

We have accumulated 2000 dies available t
at no added expense. Thus we solve, **to**
advantage, the problem of shape. The appea
of the label is further enhanced through an a
priate design. And here, both art work and p
necessary to create the hand drawn and re
plate effects, are charged to you at cost. The
touch is given by a dash of proper color again
intelligently selected shade of stock.

We suggest that you send us your prese
proposed package with a few details or some
ature about your selling plans. We feel conf
in our ability to respond with a concrete sugge
that will be the solution of your problem.

*Ever Ready will gladly quote on your embo
seal requirements.



STYLING *including* DIE CUT LABELS & SEA

XUM

eady is equipped to produce 2,000,000 Idea-
rs daily. We have unique machinery for pro-
n, printing many colors in one operation. We
also mental facilities that will help develop
oblems you entrust to us. Tell us the idea you
o put over—we'll furnish a design with a punch.

Ever Ready's

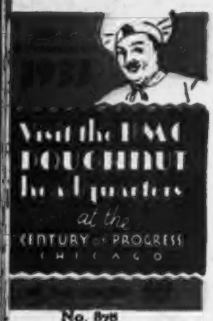
USINESS MEN AGREE ON LABELS



No. 877

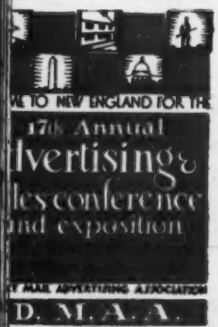
R AND BETTER NVENTIONS THRU HE USE OF STICKERS

a fellow gets to a convention a pretty good time—makes business contacts. But it's a ob getting the average man to vention. That's where stickers —and do they do a big job! organizations like American American Management As- n and similar groups use them, st know they're clicking. *got* to click.



No. 878

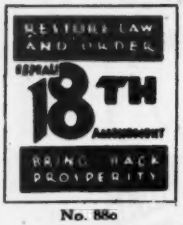
bers use convention, exposi- r and jubilee stickers on out- rrespondence and merchan- cause they always attract n.



No. 879

LABELS—BASIC AMERICAN PROPAGANDA MEDIUM

The actual business of repealing prohibition was the work of *one day*. That day of voting followed *years* of propaganda for repeal. Basic media of that propaganda drive were the Ever Ready label and windshield stickers! Did they do a bang-up job? You answer that one.



No. 880



No. 881

When first class postage rates were raised from 2c to 3c per ounce, many business folks felt that the rate tended to discriminate against local mail users. This meant propaganda to restore the local 2c rate. Extensive use of Ever Ready Labels by the Direct Mail Advertising Associations did the major share of the propaganda job (on letters, invoices, statements, merchandise, etc.)—and today we have the local 2c rate. Ever Ready Labels speak for themselves with *Action*.



No. 882



No. 883



No. 884

Two billion Ever Ready N.R.A. Seals used within the six months between August, 1933 and February, 1934 popularized the Blue Eagle as no emblem was popularized before! Became the world's greatest trademark.



No. 885



No. 886

Believe us when we say that the little sticker gets into places where other propaganda media fail to penetrate—and if you have a publicity or propaganda job, small or large, that *must be done*—Ever Ready Labels can be relied upon to do it.



No. 887

ENTHUSIASTIC PUBLISHERS WANT LABELS!



No. 888

Magazine, book and sheet music publishers alike turn to Ever Ready Labels to *put over* their latest offerings—their newest issues. How they do it?—it's simple! Magazine, Book or sheet music covers are made to do a selling job with outstanding illustrations and designs. What could be more appropriate than miniatures of those covers slipped into places where people would be attracted to them. Ever Ready Labels slip into those places on correspondence, on packages, on other covers, etc.

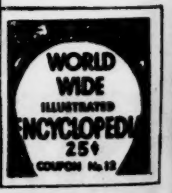


No. 889

Magazine publishers who want to boost circulation—book publishers who want to push certain of their offerings, to tie them up with movies, for example—music publishers who want to plug certain numbers—all can rely on Ever Ready Stickers to do the job.



No. 891



No. 892

XUM

LABEL NEWS

There is NO business house, organization or p
fession that cannot profitably use labels to achi
something new, or to perform some old
BETTER. This sweeping conclusion is supported
the array of useful ideas shown here. Rememb
please, that these items are only a few of MAN

AS A BASIC ADVERTISING MEDIU



No. 893

STICKERS OFFER AD VALUE PLUS PROTECTION

Water constantly dropping on a stone will eventually wear away that stone.

Ever Ready Labels bearing your slogan, your trademark, your ad—will eventually wear away sales resistance and put your message across.

We cannot begin to tell you the many, many ways Ever Ready Labels have served others.



No. 894

Here are some thoughts:

—Association trademarks
—Miniature reproductions of magazine and newspaper
—Miniature catalog cover reproductions.

ads. —Miniature reproduction of packages.
—Change of address stickers.
—Departmental reminders from department stores.

We'll be glad to suggest hundreds of other ways of using stickers in your advertising.



No. 895

STEAMSHIP & TRAVEL AGENCIES USE EVER READY STICKERS



No. 896

Going abroad? Going touring? Going to Cincinnati? Going anywhere? The answer "yes" will bring with it the request for labels to stick on one's luggage and on the windshield of the car

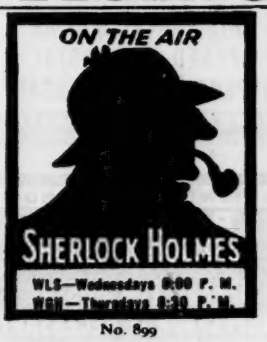


No. 897

If you are promoting a hotel or travel service—if you are managing scenic wonders—if you are the agent for railway or steamship lines—if you are the secretary of a chamber of commerce, proud of your city, state or community, Ever Ready stickers will do the promoting job in the most *popular* way. Travellers like labels—and will use them!



No. 898



No. 899

NATIONAL RADIO ADVERTISERS GET NEW LISTENERS BY USING LABELS

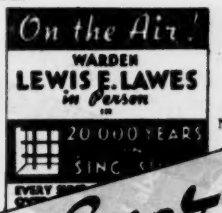


No. 900

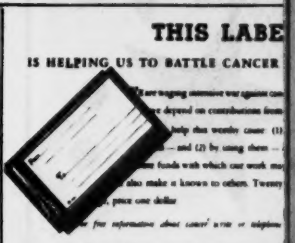
Used by radio advertisers to tie up with their broadcasts. They can be used as dealer helps—for advertisers or their dealers to paste on to letterheads, bills, envelopes, merchandise—the spot of color that delivers your message with a punch.

Ever Ready stickers help merchandise your radio programs—create consumer interest—an inexpensive medium that produces genuine results.

If you'll send us the literature and data about your program, we'll be in a better position to offer suggestions to you.



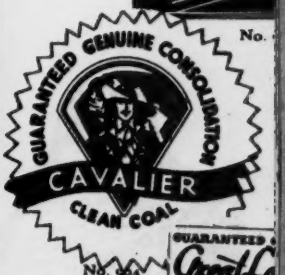
No. 901



No. 902



No. 903



No. 904



No. 905



No. 906

Ever Ready HEADLINERS

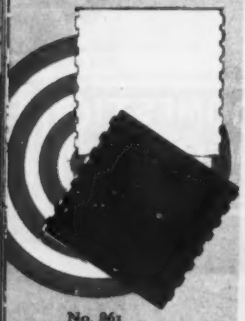
FEATURING LABEL-MESSAGES THAT GO PLACES AND DO THINGS

XUM



Made in different sizes and colors. To be used on sales charts and score cards, as decorations, displays and novelties, in school and kindergarten work, for card indexing, stock taking and clip routing. Ever Ready can satisfy these and similar requirements.





No. 861

Made of black or white gummed stock, in rolls of 500 each with perforations between each label. Used for covering bullet holes in targets, also for mounting signs, posters, cards and mailing mailing pieces. (See page 32.)

Ever Ready STOCK





Send for FREE SAMPLER

Ever Ready believes that you would like to see or actually feel the labels in which you are particularly interested. Therefore we invite you to send for any of the following samplers.

1. ADVERTISING LABELS (Idea Stickers)
2. PACKAGE IMPROVEMENT
3. GOLD AND SILVER LABELS
4. ADDRESS LABELS
5. ART DESIGN LABELS
6. P. O. APPROVED LABELS
7. EMBOSSED SEALS
8. STOCK UTILITY LABELS
9. GUMMED LABELS
10. GUMMED PAPERS
11. DIRECT MAIL SEALS AND SPECIALTIES

XUM

UTILITY LABELS





No. 949 Black letters on white gummed paper, printed on perforated sheets. Used for file folders, cards, drawers, as index tabs for indexes, etc. Prices on request.



Figures gummed white, per, printed on perfo sheets. Used for numbering boxes, shelves, hooks, b packages, mail bo storage items, cl etc. Price req



No. 922 60 cents per thousand



No. 923 60c per M

Department Store Labels

Labels 924 to 926 will lend a modern touch to packages that leave your shipping room.
*Label 927 indicates the possibility of personalizing your caution or any other message.



No. 924 1000—$ .85 5000—$ .65 per M



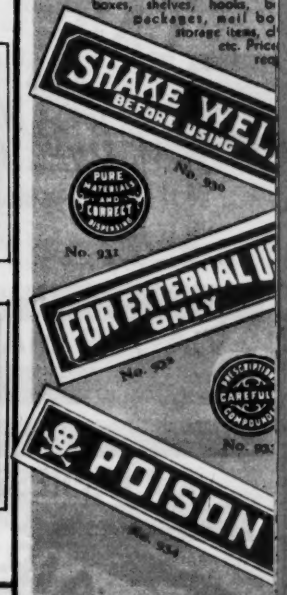
No. 925 1000—$ .85 5000—$ .65 per M



No. 926 1000—$ .85 5000—$ .65 per M



No. 927 Prices on request.



Nos. 930 to 934 60c per 100

5,000 for $3.00



THINK OF A MESSAGE YOU NEED TO DELIVER

THIS SPACE RESERVED for YOUR MESSAGE



Refer to Pages 4-5 for Suggested Uses.

XUM



STOCK "All Purpose" LABELS

TIME SAVERS . . . MISTAKE PREVENTERS . . . ATTENTION GETTERS

Gummed and deeply perforated.
Packed one thousand to a roll.
Each roll in a convenient dispensing carton.

5000—60c per M.
10000—50c per M.
Single 1000—75c
Special prices in quantities



EXPRESS — No. 962

INVOICE INSIDE — No. 963

SPECIAL DELIVERY — No. 943

SHIP — No. 953

THIS SIDE UP — No. 964

LIQUID FRAGILE · THIS SIDE UP — No. 944

PREPAID — No. 954

OPEN THIS END — No. 965

RUSH — No. 945

PERISHABLE — No. 955

WATCH SHIPPING INSTRUCTIONS — No. 966

DON'T CRUSH — No. 946

HANDLE WITH CARE — No. 956

BILL IN — No. 967

FRAGILE — No. 947

SPECIAL HANDLING — No. 957

KEEP AWAY FROM HEAT — No. 968

C.O.D. — No. 948

FIRST CLASS MAIL — No. 958

INFLAMMABLE — No. 969

SPECIAL — No. 949

TO-DAY — No. 959

KEEP FROM FREEZING — No. 970

FRAGILE LIQUID — No. 930

SPECIAL — No. 960

KEEP DRY — No. 971

WILL CALL — No. 951

FUTURE — No. 961

SAMPLE — No. 972

Nos. 937–938
1000—$1.00
5000—$ .75 per M

VIA AIR MAIL — No. 937

AIR EXPRESS — No. 938

ENCLOSURE — No. 936
Embossed—$1.00 per M

Nos. 939–940
1000—$1.50
5000—$1.00 per M

VIA AIR MAIL — No. 939

AIR MAIL — No. 940

REGISTERED MAIL — No. 941

Nos. 941–942
60c per thousand

Special Delivery — No. 942

CUT SINGLE IF PREFERRED . ASSORTED TITLES AT QUANTITY PRICES

Ever Ready STOCK CAUTION LABELS

HANDLE WITH CARE
GLASS

This size, 2 x 3, in FOUR DESIGNS: A—B—C—D. Color deep red. Roll form or flat. 1000—$1.50 5000—$1.00 per M 10000—$.85 per M.

This size, 2½ x 3¾, in FOUR DESIGNS A—B—C—D. Color deep red. Roll form or flat. 1000—$1.85 5000—$1.25 per M. 10000—$1.10 per M.

This size, 3¼ x 5, in FOUR DESIGNS A—B—C—D
Color deep red. Roll form or flat.
1000—$2.50 5000—$1.75 per M 10000—$1.45 per M

This size, 4 x 6, in FOUR DESIGNS A—B—C—D. Color deep red.
Roll form or flat. 1000—$2.85 5000—$2.15 per M 10000—$1.85 per M.

HANDLE WITH CARE
GLASS
THANK YOU
Design A
No. 973

HANDLE WITH CARE
FRAGILE
THANK YOU
Design B
No. 974

GLASS
HANDLE WITH CARE
Design C
No. 975

FRAGILE
HANDLE WITH CARE
Design D
No. 976

RAILWAY EXPRESS PROMOTES SPEED AND SAFETY WITH LABELS

The advertisement to the right is one of a series now in national use by the Railway Express Agency. In such magazines as The Saturday Evening Post, the Railway Express Agency is telling shippers of the vast importance attached to the use and observance of the proper labels on shipments.



LABELS that MEAN what they SAY

"RUSH"..."HANDLE WITH CARE"..."KEEP from HEAT and COLD"..."DELIVER IMMEDIATELY on ARRIVAL"...these are a few of the many special labels used by Railway Express to insure speed, safety and careful handling.

And these shipping instructions are not "suggestions" to our 50,000 employees. They are orders...orders that must be followed literally.

The best there is in transportation

SERVING THE NATION FOR 95 YEARS

RAILWAY EXPRESS AGENCY, Inc.
NATION-WIDE SERVICE

1¾" x 5⅛"
SHIPPING AND OFFICE LABELS

GLASS
HANDLE WITH CARE

No. 977

This group of small stock labels is made up in the following assortment of titles:

Special Delivery	Prepaid
Rush	Special Handling
Fragile	First Class
C.O.D.	Today
Special	Express

Watch Shipping Instructions

PRICE: 50c PER THOUSAND



FREE HOLDER

CAUTION
TEAR GAS
DO NOT DROP
No. 978

KEEP FROM HEAT
PERISHABLE
FOOD PRODUCT
RUSH DELIVERY
No. 979

PHONOGRAPH RECORDS
FRAGILE
HEAT COLD
THIS SIDE UP
No. 981

WARNING! BEWARE OF FUMES
POISON GAS
No. 983

FRAGILE
RADIO
PLEASE USE CARE
No. 980

PLEASE
LAMP SHADES
PLEASE USE CARE
FRAGILE!
No. 984

The labels above are indicative of the types of *Special Caution Labels* that we have made. There are certain lines of business that require such specialized labels to insure the proper handling of their products in transit. Consult us regarding your specific requirements.

Ever Ready Gummed Tape-

COMBINATION No. 1— *Automatic Sealer No. 10*



An innovation in gummed tape moistening. Has fine lines. One stroke cuts and moistens tape. Length can be varied. Pressure plate and brush principle assure perfect moistening surface. Takes tapes from ½" to 1½" wide.

Finish: Silver crackle with nickeled parts. Price: **$17.50**

Fifty rolls, 1¼", 35-lb. tape, 500 ft. to roll, printed one color, at 48c per roll . . . . . Total **$24.00**

Total retail value **$41.50**

COMBINATION "DEAL" PRICE **$35.00**

COMBINATION No. 2— *Packer Sealer No. 30*

Counterboy Product. Durable, efficient machine for 2" or 3" tape. Used by large



mail order shippers throughout the country—proving its efficiency. Cuts and moistens tape to varied lengths.

Price: **$20.00**

25 rolls, 3", 60-lb. tape, 600 ft. to roll, printed in two colors, at $1.25 per roll . . . . . Total **$31.25**

Total retail value **$51.25**

COMBINATION "DEAL" PRICE **$45.00**

COMBINATION No. 8

Express Sealer No. 1½



Has same construction and features as Express No. 3. Recommended for counter use. Price **$3.50**

16 rolls, 1", 35-lb. tape, 500 ft. to roll, either orange, grey, blue or yellow kraft, printed in one color, at 80c per roll . . . . . Total **$12.80**

Total retail value **$16.30**

COMBINATION "DEAL" PRICE **$12.50**

Ever Ready's NEW Moistener

AFTER 10 YEARS OF EXPERIMENTING *Ever Ready Recommends a Sanitary Moistener*

UNLIMITED USES FOR THIS REMARKABLE NEW MOISTENER

1 **MOISTENING POSTAGE STAMPS** is made easy—gives an even moistening.

2 **MOISTENING LABELS** now means moistening evenly and helping adhesion.

3 **SEALING ENVELOPES**—Speeding up the sealing of envelopes is no small part of the new moistener's work.

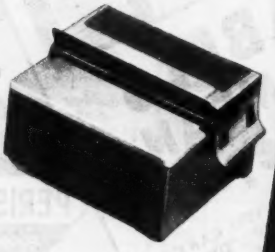


A Self-Cleaning Moistener

Moistening surface is velour—self-washing—retaining no dirt—won't congeal. It is clean . . . looks clean . . . stays clean. A neat aluminum cap prevents evaporation—one filling of water lasts a long time.

COMBINATION No. 9

Labeler



Brush principle—assures even application of moisture. Large water reservoir eliminates constant filling. Special pressure plate construction permits one hand operation.

3½" moistening width . . . . . Price **$4.00**

5½" moistening width . . . . . Price **6.00**

7½" moistening width . . . . . Price **8.00**

You may deduct 33⅓% from these prices when purchasing any of the above labelers in conjunction with labels amounting to $5.00 or more.

GUMMED SEALING TAPE

Owing to fluctuations of the gummed kraft sealing tape prices, we find it impossible to list more than a few tape prices. We solicit the opportunity of quoting on your requirements not covered on these pages.

Bear in mind, please, that Ever Ready offers plain and printed tape in all sizes and colors.

All machines listed under "Deals" may be purchased separately at prices quoted.

XUM

Sealing Machines and Moisteners

COMBINATION No. 3—*Jiffy Automatic Taper*

Combines simplicity and sturdiness in modern finish. Holds tape from ½" to 1½". Lengths from 2" to 6".

Finish: Green, Bronze or Silver.



Price: $15.00

25 rolls 1", 1¼" or 1½", 35-lb. tape, 500 ft. to roll, printed one color, at 60c per roll . . . . . Total $15.00

5 rolls of plain tape, above widths, at 30c per roll . . . . . Total $1.50

Total retail value $31.50

COMBINATION "DEAL" PRICE . $25.00

COMBINATION No. 4—*Ever Ready Tape Sealer*

Simple tape moistening device has special patented dry-tab feature enabling operator to withdraw tape, moisten, cut and apply to package without fingers coming in contact with wet side of tape.



Price: $15.00

Finish: Polished aluminum.

50 rolls of 1½", 35-lb. tape, 500 ft. to roll, printed one color, at 55c per roll . . . . . Total $27.50

Total retail value $42.50

COMBINATION "DEAL" PRICE $36.25

35c

No fuss—No muss
A Jiffy Moistener



For Use In Every Home and Business

The new Ever Ready Moistener belongs on every desk where stamps, labels and envelopes are used. Handy to Hold—Handy to Use.



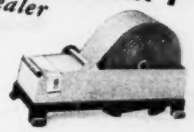
Ever Ready Moistener

Made of glass, with velour moistening surface and aluminum cap. By Appearance suited for Executive's desk.

FOR SALE AT STATIONERS, PRINTERS, OFFICE SUPPLY DEALERS

COMBINATION No. 7

Express Sealer No. 3



New type of hand-pull machine.

Simple loading, with *no* adjustment gadgets. Very attractive. Streamline design. Works on efficient brush-moistening method.

Price: $5.00

10 rolls, 3", 60-lb. tape, 600 ft. to roll, plain grey, orange or blue kraft, at 75c per roll

or

15 rolls, 2" tape, in any of above colors, 50c per roll

Total $7.50

Total retail value . . $12.50

COMBINATION "DEAL" PRICE $10.00

COMBINATION No. 6

Sealrite No. 2

Same features as Sealrite No. 322, width capacity 2".



Price: $3.50

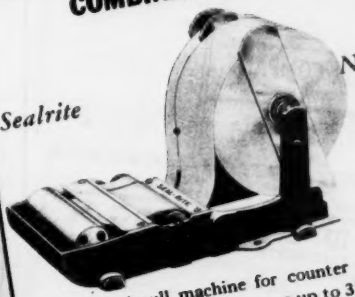
20 rolls, 1½", 35-lb. or 30 rolls 1" plain tape, 500 ft. to roll . . . . . Total $5.00

Total retail value $8.50

COMBINATION "DEAL" PRICE $6.00

COMBINATION No. 5

Sealrite *No. 322*



Simple hand-pull machine for counter or shipping room use. Takes any width tape up to 3". Has brass roller attachment.

Price: $5.00

Finish: Grey enamel.

16 rolls, 1", 35-lb. tape, 500 ft. to roll, printed one color, at 60c per roll . . . . . Total $9.60

5 rolls, 1" plain tape at 20c per roll . . Total $1.00

Total retail value $15.60

COMBINATION "DEAL" PRICE . . . $11.75

. . . *when ordering* . . .

When ordering one of the Combination "Deals," be sure to specify the following:

a—number of the deal
b—copy for printing (where printed tape is specified)
c—width of tape (where there is a choice)
d—color of tape (where there is a choice)

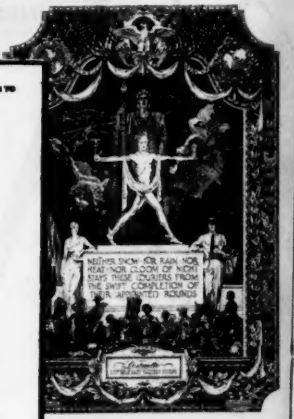
All prices quoted subject to any tax imposed by the government. We will gladly send any machine on a one-week approval basis to any firm rated in Duns and Bradstreets.

XUM

Ever Ready LABELS approved by U.S. POST OFFICE

THIS letter of approval from the United States Post Office Department covers the correctness of form of Ever Ready Labels. These shipping labels are the proper Post Office approved forms for parcel post shipments. We suggest that you see your local postmaster if you are considering the use of any other arrangement. He will advise you properly. Remember—the Post Office is willing and anxious to cooperate thoroughly with you on matters that will speed up your mailing service.





Post Office Department
THIRD ASSISTANT POSTMASTER GENERAL
Washington

90877

March 14, 1935.

Mr. Sidney Hollaender,
Ever Ready Label Corporation,
257 West 17th Street,
New York, N. Y.

My dear Sir:

With reference to your call today at the Department, submitting a copy of the matter which the Ever Ready Label Corporation intends to insert in its forthcoming catalog, showing a number of address labels printed by that Corporation, you are advised that the labels reproduced on the sheet numbered from 157 to 170, inclusive, are in harmony with the provisions of the postal laws and regulations governing the preparation of address labels and, therefore, parcels bearing such address labels otherwise conforming to the requirements of the postal laws and regulations are acceptable.

It is understood that label No. 165 is to be placed on parcels in connection with the return card of the sender.

Very truly yours,

O. F. Meilenburger
Third Assistant Postmaster General

CAZ/v









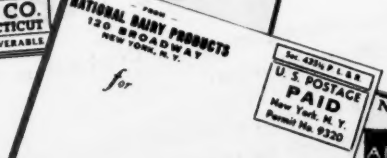


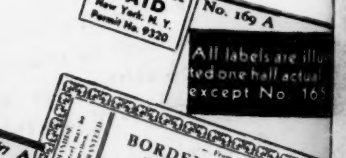
















All labels are illus
ted one half actual
except No. 165

XUM

Pertinent Paragraphs



¶.. promises not "mere idle words"

Both packages arrived promptly this morning. Many thanks for the "Ever Ready" service. We were thus able to satisfy our customer and, incidentally to convince ourselves that your promises of good service and co-operation are not mere idle words.

Southern New England Telephone Co.

¶.. more business—best recommendation

The best way we can show our feeling towards you, that is whether your service meets our approval, etc., is to send you another order for sample mailing, same design as the first lot of 250,000.

Vick Chemical Co.

¶.. twelve years of continuous patronage

After spending several years of floundering around trying to find a label that would suit our various requirements, we were recommended to you people in 1923 and have been doing satisfactory business with you ever since.

Paterson Parchment Paper Co.

¶.. little labels close big deals

Several millions of your stickers in rolls have been used in demonstrating our Stamp Affixers. Your product has met with the approval of ourselves, our agents, and the users of our machines, and the service rendered has been very satisfactory.

Standard Mailing Machine Co.

¶.. highly pleased with the work

We appreciate the excellent service you have rendered us.

We have been highly pleased with the work you have turned out and hope that our relations will be as amicable in the future as they have been in the past.

Metro-Goldwyn-Mayer.

¶.. A dependable Source of Supply

Printed labels play a very important part in our advertising service to our customers. It was very important to us from the outset to select a dependable source of supply for our labels and we are very happy to acknowledge at this time that we made no mistake eight years ago.

In every one of the countless hundreds of orders you executed for us, in less than half the regular scheduled time, we were impressed by the high quality of product and intelligent service that accompanied it.

Doughnut Corporation of America.

¶.. Favorable Comments on our Labels

We need a new supply of mailing labels and again the order is being placed with you because we are very satisfied with our labels and your service.

You will probably be interested in knowing that we have received a number of favorable comments on the appearance of our labels.

The Reuben H. Donnelley Corp.

¶.. Don't Remember One Single Complaint

The excellent quality of your labels and the fine service your organization has given us is greatly appreciated.

We make Ever Ready Razors—You make Ever Ready Labels. Ever Ready hands a bouquet to Ever Ready.

I don't remember one single cause for complaint as to quality or service.

American Safety Razor Corp.

¶.. Office Girls and Shipping Clerks Enthusiastic

Your labels are by far the best labels we have ever had, as regards appearance, texture, perforations, etc. Office girls and shipping clerks are both enthusiastic over them: hence this word of appreciation for the splendid work you did.

Walker, Corp. & Co., Inc.

¶.. Research wins yearly contract

Having just contracted for our annual requirements we take this occasion to express our hearty appreciation of the service you have rendered, particularly in developing materials best suited to our individual requirements. Your ability and desire to render service has always materially influenced our negotiations with you.

Pitney-Bowes Postage Meter Co.

¶.. We Select Good Suppliers . . .

Our turnover of employees and suppliers is probably as low as any manufacturer in the country. The reason for this is simply that we select good employees from the beginning . . . and good suppliers too.

Our continuous purchases for nine years from you is not exceptional, but indicates our original choice in our label supplier was wisely made.

Health Products Corporation.

POSTAL



The U. S. Post Office has certain rules and regulations about address labels. You should follow these forms on your own Parcel Post labels.



FOURTH CLASS MATTER

(Domestic Parcel Post)

FOURTH-CLASS MATTER embraces what is known as domestic parcel-post mail exceeding 8 ounces in weight and includes merchandise, farm and factory products, seeds, cuttings, bulbs, roots, scions and plants, books (including catalogues), circulars and other printed matter, and all other mailable matter not embraced in the first and second classes. (Sec. 569, Postal Laws and Regulations.)

UNMAILABLE MATTER. All matter is unmailable which is of a harmful nature, such as poisons; explosives and corrosive articles; matches, except safety matches (strike only on box variety); live animals, fowls (except day-old chicks, day-old geese, day-old guinea fowl, and day-old turkeys), insects, and reptiles; articles exhaling a bad odor. The postal laws provide a severe penalty for the mailing of harmful articles.

LIMIT OF SIZE. Parcel-post matter may not exceed 100 inches in length and girth combined. In measuring a parcel the greatest distance in a straight line between the ends (but not around the parcel) is taken as its length, while the distance around the parcel at its thickest part is taken as its girth. For example, a parcel 35 inches long, 10 inches wide, and 5 inches high measures 65 inches in length and girth combined.

RATES OF POSTAGE on fourth-class matter—to be fully prepaid—are by the pound, according to distance or zone, a fraction of a pound being computed as a full pound.

MARKING PACKAGES

THIRD CLASS (up to 8 ounces) and FOURTH CLASS (over 8 ounces) MAIL. The shipper's name must include the name and address (including street address) as well as the words "Return Postage Guaranteed" if the package is to be returned in case of non-delivery. This copy should be placed in the upper left corner of the address side. Your return card should NEVER be printed at the bottom of the label—it should always be at the top or at the left end of the label. The reason for this regulation is that a MAIL CLERK IS ACCUSTOMED TO LOOK AT THE BOTTOM OF THE LABEL FOR THE DESTINATION OF THE PACKAGE. A package with a label having the sender's card printed at the bottom is apt to be returned to the city from which it was mailed.

Approved Postal Forms 985-986-987-988 are obtainable in any size to meet your requirements.

SEALED PACKAGES. To send sealed packages at parcel post rates—the package must bear a label with the following clause *printed* on it.

Contents—Merchandise
POSTMASTER: This parcel may be opened for postal inspection if necessary.
Return Postage Guaranteed.

This clause must be *printed*—it cannot be written or typewritten on the label. When buying labels intended for use on parcel post shipments, be sure to have this clause included as part of the printed copy.

C. O. D. MAIL

The sender of a mailable package on which the postage is fully prepaid may have the price of the article and the charges thereon collected from the addressee.

No. 988 illustrates the prescribed form for marking C.O.D. mail. C. O. D. insignia must be red.

INSURANCE REGULATION

A Mailable parcel on which the postage is fully prepaid may be insured against loss in the amount of its actual value at the prescribed rate.

Postal Authorities and the insurance companies insuring parcel post shipments, request that nothing be printed on a label to indicate the contents of the package when such information might tempt a person to steal. For Example: "Fresh Flowers" might be printed on a florist's label but "Diamonds, Watches and Jewelry" should not be printed on a jeweler's label. Insured insignia must be red.

DOMESTIC AIR MAIL

RATES. The rate of postage on air mail is 6 cents for the first ounce and 6 cents for each additional ounce or fraction of an ounce. This is a recent ruling and marks a considerable decrease over former rates.

MAILABLE MATTER. Any mailable matter except that liable to damage from freezing may be sent by air mail. Parcels may not exceed 70 pounds in weight and 100 inches in length and girth combined. The prohibition against acceptance of articles liable to damage from freezing does not include cut flowers.

MARKINGS. Air mail should be conspicuously indorsed "VIA AIR MAIL" in the space immediately below the stamps, above the address. Ever Ready "Air Mail" stickers on Page 40 have been found most advantageous for marking mail for Air Delivery.

SPECIAL DELIVERY

(Parcel Post)

Third and Fourth Class Mail matter for delivery in U.S.A. on which the proper Special Delivery fee is prepaid in addition to regular postage, will receive the same handling and transportation as is accorded First Class Mail, in addition to immediate delivery at the office of destination.

Shippers are requested to display prominently special delivery label, particularly when regula and not special delivery postage is used.

SPECIAL HANDLING

Fourth Class Matter only on which the proper special handling fee is prepaid in addition to regular postage will receive the most expeditious handling and transportation possible but does not entitle the parcel to special delivery upon arrival at the office of destination.

NTED BY THE CUNEO PRESS, INC., CHICAGO



Ever Ready's Complete Label Service Considers Your Special Needs

Every business has, in addition to its regular products, at least one or more specialties—by-products of specialized machinery and ability.

Ever Ready produces a great many such specialties, along with the regular products mentioned on the foregoing pages.

★

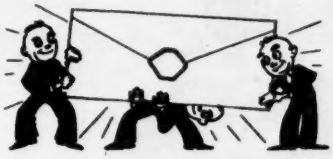
COLORED GUMMED OR UNGUMMED PAPERS—may be used on any label requirement in place of white at slight added cost.

Colored labels have unusual advantages in many specific instances. Colors available: RED, BLACK, LEMON YELLOW, GOLDENROD, BLUE, GREEN, ORANGE, PINK, SALMON, BROWN, BUFF, GREY.

★

GUMMED OR UNGUMMED SILVER AND GOLD PAPERS—give a rich appearance to packed merchandise. When used for labels, stickers or seals, gold or silver papers lend that "tone" so important to the success of your package or any message you deliver. We will gladly send a Sampler Package.

★



GUMMED GLASSINE OR TRANSPARENT PAPERS—The Post Office Department has accepted glassine seals as a substitute for the old-fashioned wax seals on registered mail. Ever Ready produces a great number of these glassine seals for Banks, Insurance companies and other registered mail users. Glassine paper has other uses, such as stamp hinges, seals for spouts on salt containers, etc.

★

GREASEPROOF PARCHMENT PAPERS—available for use on food products, on bakery goods, meats, provisions, etc.

★



GUMMED CLOTH AND HOLLANDS—gladly furnished by Ever Ready for special binding needs. Write for samples and prices.



SPECIAL INKS—it is a very simple matter for Ever Ready to *match* the color of any printing job. Special grades of inks to meet unusual requirements are yours to command.

★

STRIP GUMMED PAPERS—may be handily converted into gummed-end labels for tipping on forms, or banding on merchandise—also for use on letterheads, billheads, yarns, etc.

★

GUMMED FACE LABELS—Labels for use on windshields, store-fronts, etc., are made by Ever Ready on special paper. The message is printed on the gummed side.

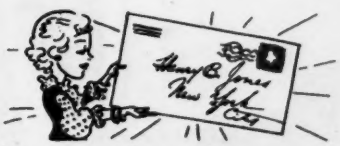
★

NUMBERING AND VARNISHING—Ever Ready offers complete facilities for numbering labels either gummed or ungummed—for varnishing labels in accordance with your needs.

★

PUNCH HOLE LABELS—Ever Ready offers complete facilities for furnishing special punched labels to be used on Counterboy, Sep-A-Label Machine attachment, and for addressograph machines.

★



POSTAGE METER TAPE—Ever Ready supplies the necessary tape for Postage Meter Machines—accurately cut and laterally serrated—a problem we solved for Pitney Bowes Postage Meter Co.

★

CHAIN STORE SUPPLIERS LABELS—Chain store mass-production suppliers will find at Ever Ready complete facilities for furnishing pre-addressed labels on rolls.

★

PRICE STICKERS—Every year Ever Ready produces some 300,000,000 gummed price stickers for America's largest group of chain department stores. Each label is made with a special notch to fit a price imprinting machine. This is another of Ever Ready's specialized jobs.

FLEISCHMANN YEAST LABELS—here again we have a problem of machine application where a small label was required equipped with a series of punch holes to register with the machinery. The label is a familiar design to everyone. Ever Ready has produced this in a roll form, suitable for the rapid application required in this tremendous volume production.

★



DUPLICATE COPY ADDRESS LABELS—A national organization, some years ago offered in their radio broadcast a complimentary edition of Sherlock Holmes Mystery Stories. To facilitate the handling of the numerous requests, Ever Ready supplied a perforated roll label interwound with a duplicate and a one-time carbon, making possible the typing of a duplicate and permanent record of prospects for future follow-up. This set up enabled the organization to speedily respond to requests and yet have the necessary data in their file for future reference.

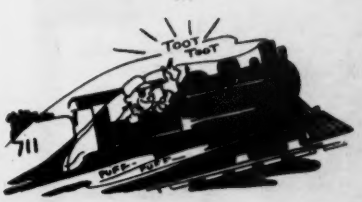
★

MANILA AND KRAFT PAPERS—a complete assortment of gummed and strip-gummed papers is offered for specialized uses. Gives extra strength and adhesion.

★

CARDBOARD WRAPPERS FOR GEM RAZOR BLADES—This item is made of cardboard printed with a pertinent message and prepared in continuous rolls equipped with a punch hole arrangement enabling the wrapper to be applied to the razor on an automatic feeding machine. The punch holes and the width of the protective wrapper must be accurate to properly register on this machine and with Ever Ready's specialized equipment, we are in a position to furnish this form at an amazingly low cost.

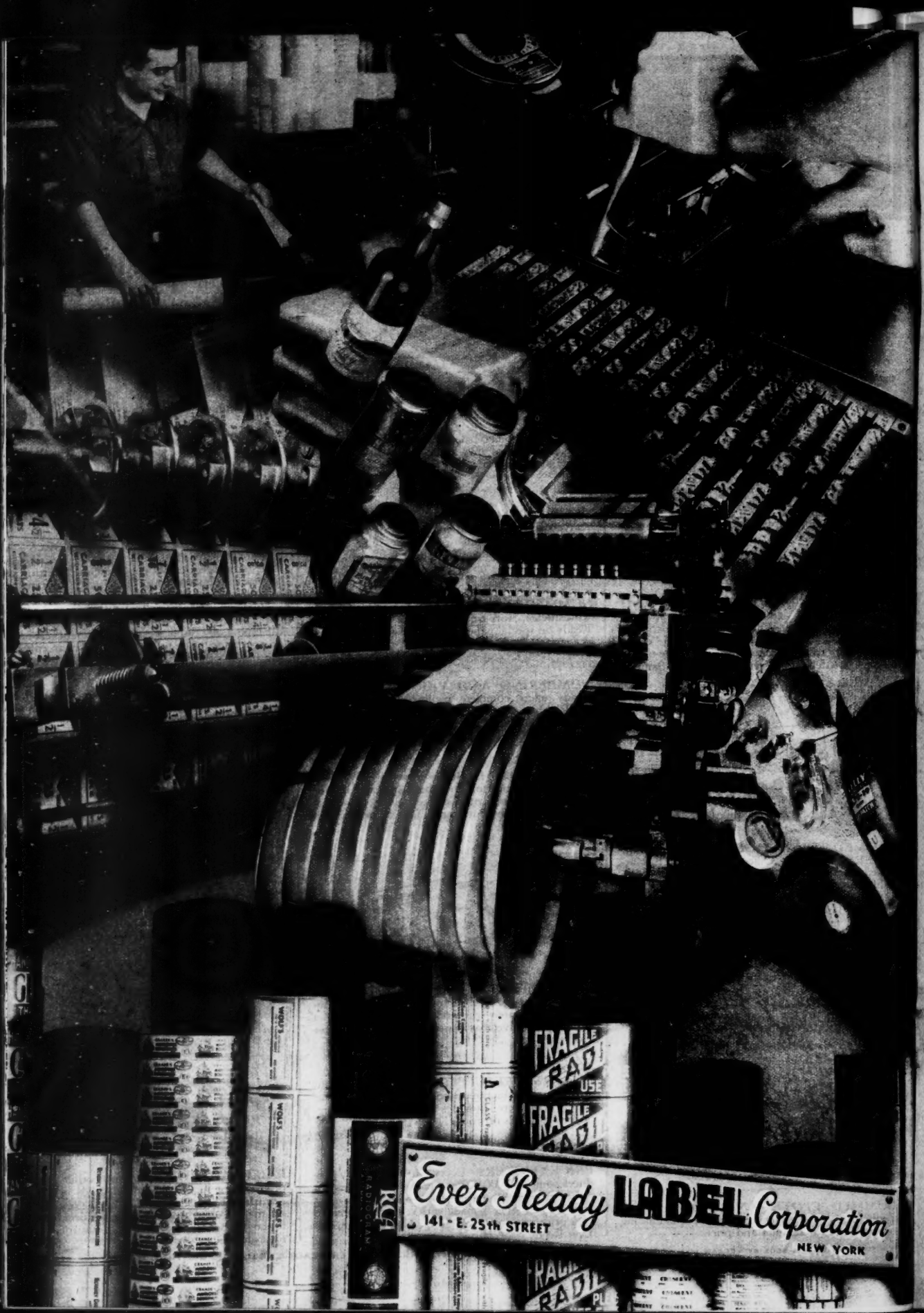
★



RAILROAD TAPE—Among other unusual products for highly specialized needs is this tape furnished by Ever Ready in rolls, for charting steam and electric locomotive performance, and for coal consumption records—a statistical service for railroads.

PHOTOGRAPHY IN THIS BOOK BY McGRAW HILL STUDIOS

COPYRIGHTED 1935 BY EVER READY LABEL CORPORATION, N.Y.C.


FRAGILE
USE
Ever Ready LABEL Corporation
141 - E. 25th STREET
NEW YORK

XUM

This

BOUND-IN

-P-U-L-L-O-U-T-

Catalog

is your permanent easy-to-use reference to the label source that's logical.

Go through its pages to get the wide scope of Ever Ready Service. Study the samples on the other side of this panel to get the "feel" and the "look" of Ever Ready Quality.

Ever Rea

"Go Places and

Additional

NO-OBLIGATION COPIES

for your other executives may be had for the asking.

LIFT AND P-U-L-L HERE



Ever Ready LABEL Corp.

SINCE 1914

143 East 25th Street, New York 10, N. Y.

XUM

XUM



XUM

This
BOUND-IN
-P-U-L-L-O-U-T-
Catalog
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Additional
NO-OBLIGATION COPIES
for your other executives may be had for the asking.

LIFT AND P-U-L-L HERE

Ever Ready LABEL Corp.
SINCE
143 East 25th Street New York N.Y.

AMMONIUM — COPPER SOLUTION

LUCKY STRIKE
FUNGICIDE

Fungicide - Stimulant
FOR ROSES
Delphiniums, Hollyhocks, Etc.
CONTROLS MILDEW AND BLACK SPOT AND CERTAIN FUNGUS DISEASES
Active Ingredients: Metallic Copper 4%, Nitrogen as Ammonium Salts 2%. Inert Ingredients 94%

THE PARROTT CHEMICAL CO. STAMFORD, CONN.

from FRANKLIN RESEARCH
Producers of "Aerated"
RUBBER GLOSS WAX
5134 LANCASTER AVE. PHIL

FR WAX "The preservative Film of a
POSTMASTER CONTENTS MERCHANDISE THIS PA
INSPECTION IF NECESSARY

TAKE Advantage OF OUR FREE PICKUP AND DELIVERY SERVICE

JUST Phone CHickering 4-6300

NEW YORK CENTRAL SYSTEM



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Return po

XUM

UTION

Makes 5 Gallons Finished Spray

DIRECTIONS FOR USE

TABLE

1 Teaspoonful to 1 Pint Water
2 Teaspoonsful to 1 Quart Water
8 Teaspoonsful to 1 Gallon Water

4 oz. makes approximately 4 gallons finished spray.

For tender foliage in greenhouses use only ½ the above suggested dilution of Fungicide and Stimulant.

Spray foliage as often as necessary keeping a film of the solution on the foliage if possible. Always spray after a rain.

NOTICE

To kill insects also, when spraying to control Fungus Diseases, we strongly recommend using Lucky Strike Garden Insect Spray together with Lucky Strike Fungicide and Stimulant, in the following dilutions.

EXAMPLE

1 teaspoonful Fungicide and Stimulant — ¼ teaspoonful Garden Insect Spray — makes 1 pint finished insecticide and fungicide.

By using the 2 products together a satisfactory kill against both Chewing and Sucking insects will be obtained as well as to control the fungus diseases.

Keep in Cool Place **Shake Well Before Using**

Does not disfigure or harm foliage when used as directed

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Etc.
SPOT
SES
Nitrogen
nts 94%

CONN.

ESEARCH CO.
f "Aerated"
LOSS WAX
PHILADELPHIA, PA.

ve Film of a Million Uses"

NTS: MERCHANDISE THIS PARCEL MAY BE OPENED FOR POSTAL
TION IF NECESSARY RETURN POSTAGE GUARANTEED

CONTENTS 15 FL. OZ.

RAPID
Dryfast
TRADE MARK
CONCENTRATE

The World's Finest
FINGER WAVE
LOTION

PRICE
$1.00

QUALITY PRODUCTS CO., INC.
NEW YORK, N. Y.

The Pioneers of Concentrated Finger Wave Lotions

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CHASE BRASS & COPPER CO.
— INCORPORATED —
SUBSIDIARY OF KENNECOTT COPPER CORPORATION

POSTMASTER:

This parcel contains merchandise and may be opened for postal inspection if necessary. Return postage guaranteed.

TO



TRADE MARK
REG. U. S. PAT. OFF.

OUR ORDER NO. | CUST ORDER NO | CUST. REQ. NO.

XUM

Samples

FROM EVER READY
"LIBRARY OF A MILLION LABELS

A general assortment selected to show quality of paper, printing, gumming and design . . . and to indicate Ever Ready's aim and claim of "A Label for Every Label Need."

Let THE EVER READY Art DEPARTMENT



help to create and or execute your design-ideas. Pencil sketches, roughs, color sketches and finished drawings by men who've made a job of label designing and do a good job.

Ever Ready LABEL Corporation

SINCE 1914

143 East 25th Street, New York, N. Y.

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2. A group of lithographed liquor labels. The finest type of lithography is used for labels of this sort which are frequently also treated with gold or silver inks and are usually die-cut or embossed. Photo courtesy Fleming-Potter Co.

wrapper and at the same time to keep the package clean, fresh and attractive during the period of its use, he may specify varnish or lacquer finish.

Paper box: In some cases, colored box board is used, making a box wrapper unnecessary. The only label required in this instance would be an end label designating commodity, size and the like, such as collar, underwear and shoe boxes.

Tin can: As the container is not transparent, it is important that the label give all pertinent information concerning the contents, in order that the consumer may have an accurate idea of what he or she is buying. This places a double burden on the label. It must make an attractive package and, at the same time, have sufficient reading matter to make it truly informative.

Canned food labels have made remarkable strides in the last few years and the art work and the printing or lithographing compares very favorably with advertisements seen in the best magazines of today.

Fibre can: The labels for this type of container are similar to the tin can labels, with the exception that fewer actual illustrations of the contents are used. This label serves the same purpose as the canned food label, in so far as the attractiveness which it lends to the package is concerned.

Case: These labels are usually placed at the end of wood or fibre cases, such as fruit crates, and are multicolored and very elaborate. The remarkable improvement in this class of label has materially added to the increased sale of these commodities.

Shipping: Under this classification will be found tags and stickers of all descriptions. The main function, of course, is to provide a means of writing the name and address of the recipient, with adequate identification of the sender. It also does not prevent them from serving, in some degree, as advertisements, through the inclusion of trade marks, advertising slogans or specific illustrations.

The stickers usually carry special handling instructions, inspection notices or data regarding service requirements en route.

Methods of Manufacture

There are two methods of manufacture most commonly used today in making labels: one, printed or letterpress and the other, lithographed or offset. The relative merits are debatable, one group leaning toward the printed label, the other toward the lithographed label. Approximately the same effects can be obtained by either method and both require the necessary original art work and engravings. (Special types—such as applied color labels, decalcomania, embossed foil, transparent labels, etc.—are treated in separate articles in this section.)

Printed: The printed label requires electrotypes cast from the original engravings and, on the press, the ink is applied to the electrotypes from the ink rollers and then transferred to the paper by direct contact. This method permits a greater flow of ink and is especially advantageous on solid backgrounds.

Lithographed: The lithographed label requires zinc or aluminum press plates made from the original engravings and, on the press, the ink is applied to the press plate from the ink rollers and then to a rubber blanket and finally transferred from the rubber blanket to the paper by direct contact. This method is especially adaptable to labels carrying half-tone or exceptionally fine screen illustrations.

Any label can be reproduced by either method and the final choice is dependent on factors varying in every case. The average person cannot differentiate between two copies of the same label, if one has been lithographed and the other printed.

XUM

Label Materials

Machine finish or book paper: An uncoated sheet used generally on inexpensive labels where a finish such as gloss overprint or spirit varnish is not required. This type of paper works best on labeling machines, because of its softness and flexibility.

Super paper: A highly calendered book paper used on labels, with and without a finish such as gloss overprint or varnish and is relatively inexpensive as compared with coated paper.

Coated paper: Used on the more expensive labels, with or without gold or aluminum bronze, varnish, lacquer or embossing. Even without varnish, the inks are more brilliant, as the coating prevents the absorption of the ink into the paper, thus enabling the ink to dry on the surface and present a glossier appearance.

Metallic and foil paper: Used more frequently on cosmetics, condiments and carbonated water. They are relatively expensive as compared with other papers, but in return present a very brilliant, eye appealing and attractive appearance.

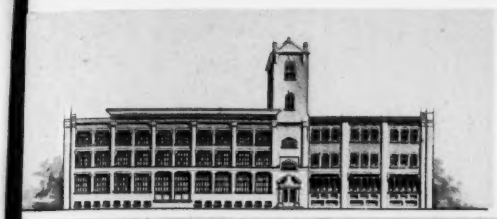
Transparent paper: Such as glassine and cellulose, is used where transparency or semi-transparency is desired and has often an added advantage of being moisture-proof.



3. Package wraps—of either the tight wrap or loose wrap varieties—form the entire visible portion of their packages. Hence the repeating designs here shown. Frequently varnished or lacquered finishes are specified.



4. Box wraps vary from the simplest forms to elaborate multi-color and direct color photographic effects.



F. M.
HOWELL & CO.

LABELS, BANDS, BOX WRAPS, FOLDING AND SET-UP BOXES, DISPLAY ADVERTISING, MENU CARDS AND FOLDERS, ENGRAVED STATIONERY

79-95 PENNSYLVANIA AVE. ELMIRA, NEW YORK

Labels, Boxes & Advertising

A Special Word
to our many
Friends and Customers

For several years we have been represented in the annual PACKAGING CATALOG with a colored insert, designed and produced in our own plant.

It was our intention to be so represented this year, but we just have not had an opportunity to print one because of the volume of work required by you, our friends and customers.

The design and engravings for this insert have been completed since Spring, but we do not feel that we should let any job of our own interfere with giving our customers the very best deliveries possible on their orders.

May we take this opportunity to express our sincere appreciation of the fine orders you have been sending us, and to assure you of our complete cooperation on your future requirements.

Yours very truly,

F. M. HOWELL & CO.

Chester E Howell

CEH:EPB

President



5. Tin can labels show an increasing use of direct color photography and more detailed informative labeling on rear faces.



6. Fibre container labels serve essentially the same purpose as tin can labels although illustrations are perhaps less frequently used and less elaborate when used.



7. Case labels—among the most colorful of all package labels—are used for fruit and vegetable crates and similar purposes. Display value is a major factor here.

Inks: They are innumerable in color and are made with various qualities to suit a particular need. For instance, inks can be made to be sun-resisting, alkali-proof, scratch-proof, alcohol-proof, odorless. The uses for inks having any one or two or more of the above qualifications are obvious.

Finishes: In the last decade there has been an increasing demand for labels with a high gloss finish. There are a number of materials on the market which can be applied on the surface of the printed or lithographed label to give this effect. There is one quality which is the common denominator for all finishes—a shiny finish which brings out the brilliancy of the inks and which also prevents soiling of the label.

Gloss overprint or spot varnish: This is applied by press, the same as a color; the entire surface can be varnished, or any portion or portions, no matter how irregular, can be left unvarnished. It gives a fairly high finish and is relatively flexible. It is not moisture-proof, but slightly moisture-resistant. It acts as a bond for the inks on the label and prevents scratching.

Spirit varnish: This is applied by a regular varnishing machine which requires the sheets to pass through a heated box. It has a considerably higher finish than gloss overprint.

Lacquer: Lacquer produces a high gloss finish and can be used on almost any type of label. There are different kinds of lacquer manufactured for special uses, such as moisture-proof, heat-sealing, scratch-proof.

There is a relatively new finish on the market which is a rubber derivative, containing approximately the same characteristics as lacquer and especially adaptable to packages requiring moisture-proofing, scuff-proofing and scratch-proofing.

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ALOG



XUM



SEEN *and Sold!*



VIVO-LITH BY

STECHER - TRAUNG

LITHOGRAPH CORPORATION

XUM

Quality PACKAGING

WILL HELP SELL *Your* PRODU



Nation Wide Service

STECHER-TRAUNG

LITHOGRAPH

CORPORATION

XUM



XUM

XUM

STOCK LABELS

by C. W. BROWNE*

There are two broad classifications of stock labels. One may be termed "convenience" labels, which—strictly speaking—are only adjuncts to packaging proper. These include shipping labels, address labels and stickers to indicate the character of the contents or to insure safe handling in shipment, such as "Fragile," "This Side Up," "Glass," "Poison," etc. Similar enough in character to be placed in the same classification, are the special seasonal stickers by means of which the all-year package may be given a gift or holiday personality, such as special Christmas seals or Mother's Day or Easter stickers.

"Packaging," proper, concerns itself more particularly with the second classification, which may be termed "product labels." Fairly enough, the question may be asked: "Is the use of stock labels in line with *modern* packaging?" Judged by years in use, the answer might be "No." Judged by utility and extent of use, the answer would probably be "Yes."

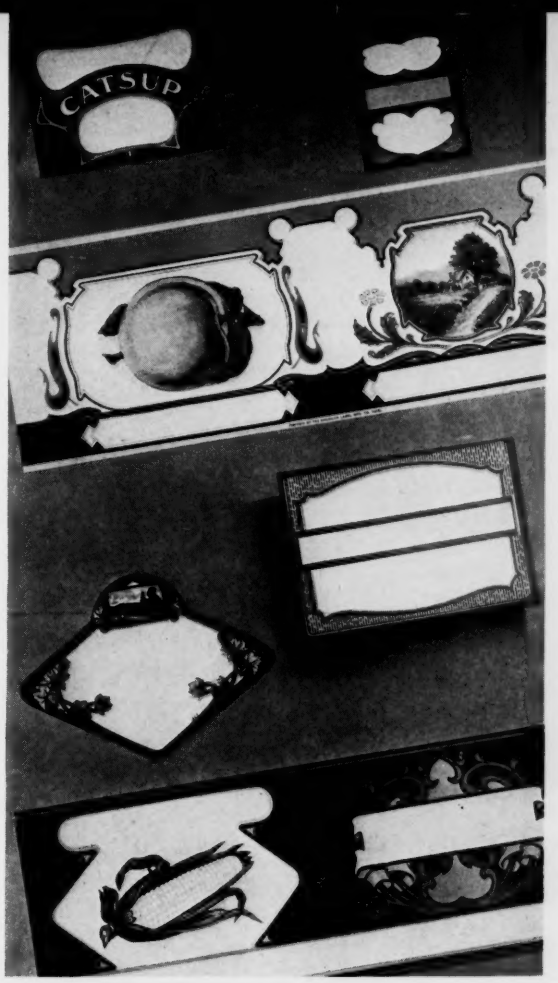
Stock labels go back many years prior to the era of packaged merchandise. Rummaging among some old records recently, the writer came across a color-printed circular dated Feb. 1, 1881, bearing the signature of Russell, Morgan & Co. (now The United States Printing & Lithograph Co.), advertising "Stock Soap Box Labels" and quoting prices per 100 and per 1000, with rates for imprinting soap name and firm name. Apparently the intervening 50 or 60 years haven't brought much change either in the way stock labels are sold or in the way they are used, though, of course, the "private design" or individual package was not then used to anywhere near the extent it is today. Fifty years ago the labeled package of branded merchandise was the exception; today it is the rule. In reality, the stock label blazed the trail for modern packaging.

Today, though the stock label may not be strictly in line with modern packaging, it nevertheless fills a real need. There are three important reasons for its use: 1. The quantity may be too small to warrant a private design. 2. There may be an imperative need for a rush delivery. 3. It may be desirable to pack the goods under a different label from the regular stock.

Label producers recognize this need and many of them are prepared to supply the demand. Some of them go in heavily for stock labels, but it must be admitted that others are rather luke-warm. This is not, however, a churlish attitude of disservice. Rather, the label printer or lithographer who takes that attitude is, in reality, helping to convince his customers of the importance of character and individuality in packaging, thus genuinely furthering their interests.

This does not mean that good designs are unobtainable. There are plenty of them and they are available for products of many kinds. But, as a general rule, the private design outranks the stock design in attractiveness and sales power.

* Manager of Marketing Service, The United States Printing & Lithograph Co.



8. A group of stock jar and can labels. These lithographed designs are intended for imprinting by the individual packer and, if carefully and tastefully finished, provide admirable effects. Courtesy The United States Printing & Lithograph Co.

Stock labels are a god-send to the small producer, because they are sold in lots as small as 1000. Frequently the entire transaction is conducted by mail. Samples or catalogs and price lists are sent on request, the customer makes his choice, prepares his copy for imprinting and sends in his order. Deliveries can be made promptly.

Prices depend, of course, on size of labels, number of colors used, die-cuts, embossing, etc. Compared with private designs produced in large quantities, the prices are relatively higher, but it must be remembered that stock labels are sold in small lots as a rule. If the purchaser had to pay all costs of art work and plates on the small quantity he uses, the prices would be prohibitive and he would doubtless be denied the use of a colorful label. By means of the stock label, he may obtain a good looking package for a small investment.

Obviously, the user of the stock label cannot be assured of individuality in design, though houses specializing in stock labels have been known to parcel out their various designs on what almost amounts to a territorial franchise basis.

XUM

Transparent-Background Labels

With increasing frequency, manufacturers have come to desire a means of attaching to glass containers trade marks, brand names and other label data which will not obscure a full view of the container's contents.

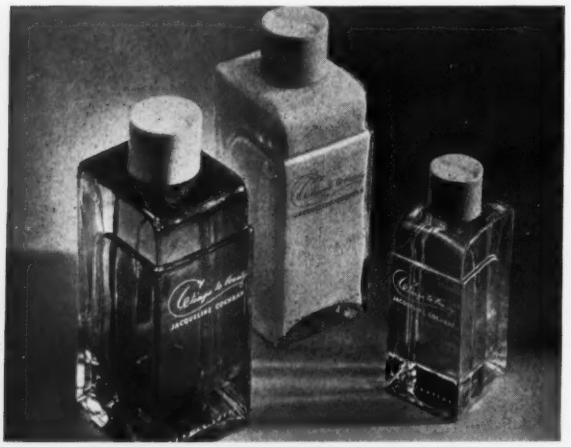
The mounting vogue for rigid transparent containers made of cellulose acetate and nitrate materials and for transparent plastic containers, has likewise demanded labels of this non-opaque type.

Several means have been developed for achieving such label effects. The article on decalcomania labels in the Display section describes one of these processes whereby transfer decalcomanias made with a transparent background are applied to glass containers, wood, plastic or metal packages and, in fact, may be applied to any type of rigid container in a manner which permits either the product or the package surface to serve as a background for the lettering.

In the glass container field, several methods of applying printing directly to the glass have recently been developed which achieve substantially the same effect. These are fully treated in the article "Printing on Glass and Plastics" in the Glass Container section.

A third method of achieving a similar effect is utilized in the case of rigid transparent cellulose acetate or nitrate containers and displays. Here the sheet material is printed or roll leaf stamped while in the flat and is then fabricated into a three-dimensional container. If such printing is designed so as to utilize no background, the desired transparent label effect is achieved as an integral part of the container.

A fourth method involves printing of the label data on cellophane sheet materials backed with a suitable adhesive so that close adhesion to the walls of the glass or plastic containers may be attained. Here again, since the print-carrying material is thin and transparent, the effect achieved is one in which the type and decorative matter seem to be applied directly to the surface of the container. When such printing is applied in reverse to the rear surface of the cellulose material, a label is achieved which is impervious to stains, water, grease, etc. Such labels may be successfully applied to glass, plastics, metal, wood, rigid transparent cellulose and non-absorbent papers.



1

2



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1–2. Transparent labels as used on opal jars and on clear glass jars with transparent or opaque contents. Note how only the printing is apparent to the eye. Photo courtesy Palm, Fechteler & Co. **3.** Applied color decoration printed onto glass and baked thereon for permanency. Photo courtesy of the Owens-Illinois Glass Co.

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SPEED UP TURNOVER

with

Quick turnover of inventory is the key to profit. Stimulate consumer demand and you facilitate quicker turnover all along the line. And the "U-S" products pictured here represent time-tested, proven methods of capturing consumer interest and arousing the buying urge. Ask for samples.

LABELS



FOLDING CARTONS AND CONTAINERS



PACKAGE INSERTS AND FOLDERS



by

"U-S"

The United States

HOME OFFICE

AMERICAN LITHOGRAPH

ATLANTIC LITHOGRAPH

RONALDSON LITHOGRAPH

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the Seal of FINE LITHOGRAPHING *and* FOIL LABEL EMBOSSING





In advertising and lithography the best is always cheapest in the long run. Among lithographers the country over the name Fleming-Potter Co., is outstanding both for the quality of creative service and the expert workmanship by which these ideas are reproduced. Whether you are in need of labels, advertising material, stationery, embossing, printing on paper or foil it will be to your advantage to consult Fleming-Potter Co. That we number among our clients the largest and most discriminating buyers of printed matter is proof we consistently maintain the highest standard in graphic arts service.

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LITHOGRAPHING — PRINTING — EMBOSSING

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Embossed Labels and Seals

For luxury products, and to give the *effect* of luxury to prosaic products, embossed labels and seals are increasingly being used. Embossing, "to decorate richly," describes its own effects. It adds a third dimension to reproduction, which means added sales stimulus through two senses: visual and tactile. High gloss papers are used to reflect light and give a smooth touch.

Foil papers of 99.6 per cent aluminum plus .4 per cent binding alloy, in thicknesses ranging from .00035 to .004 (the thinner ones being of necessity mounted to paper —sometimes gummed), are often used. Pyroxylin papers are also used. Both types come in colors, and are sold by ream or roll.

Printing in up to 3 colors, embossing, scoring and die-cutting are done in one automatic operation. Largest practicable sizes for automatic production are: 1 color, 11 in. by 14 in.; 2 colors, 7 in. by 11 in.; 3 colors, 5 in. by 7 in. For larger labels, the *separate* methods of printing, then embossing, then die-cutting are used. There is no limit except paper width (24 in. to 26 in.) and press size for this multiple-process embossing. Cost differences between the two methods are determined by specific problems.

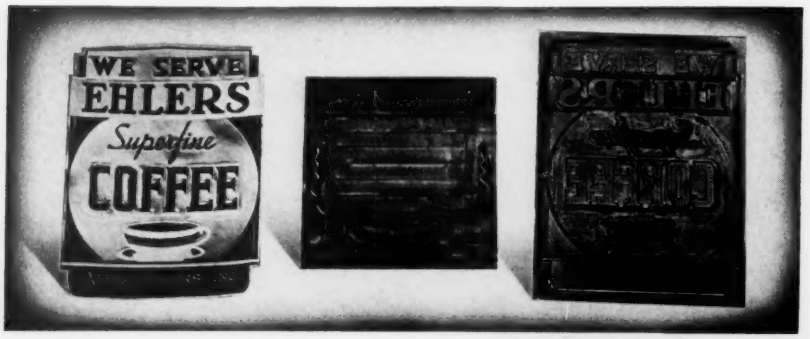
Swedge (height of embossment) is never greater than $^1/_8$ in., and requires a body grasp (surrounding area) of 3 times depth to get sufficient pull. Swedge is determined by the thickness of the foil and not by the backing.

The expensive part of embossing is die-making. Dies are made of brass (for short runs up to 50,000) and steel (for long runs—specially hardened for extra long runs) by photo-engraving with ferric bichloride. Hand finishing of the etched plate is, however, the essence of die-making. Some dies must be made completely by hand. On occasion, a small hand-made die will cost more than a large one with less hand-work. It is best to consult your embosser, therefore, before preparing art work. His advice can help to direct art work to anticipate savings in die-making.

Labels are frequently die-cut and scored for the purposes of design emphasis and ease of application. They may be applied either automatically or manually; the proportion being relatively higher by the latter process in comparison with the application of various other types of labels.

The technique of manufacture applied to the embossed label has, in recent years, been extended to the box wrap field, where embossed portions of a wrap are labeled onto the wrap itself and then the whole applied to the box by standard box-making methods.

Another development in recent years involves the building up of embossed labels, utilizing several materials—various colors of foil or pyroxylin paper. Various segments of such labels are mounted on a carrying stock and reach the consumer as a completely fabricated whole, ready for application to the package.



Left, a large, automatically produced embossed label. The two colors are printed on one press. Center die prints the first color, right die prints the second color, embosses and die-cuts the pattern in a single operation.



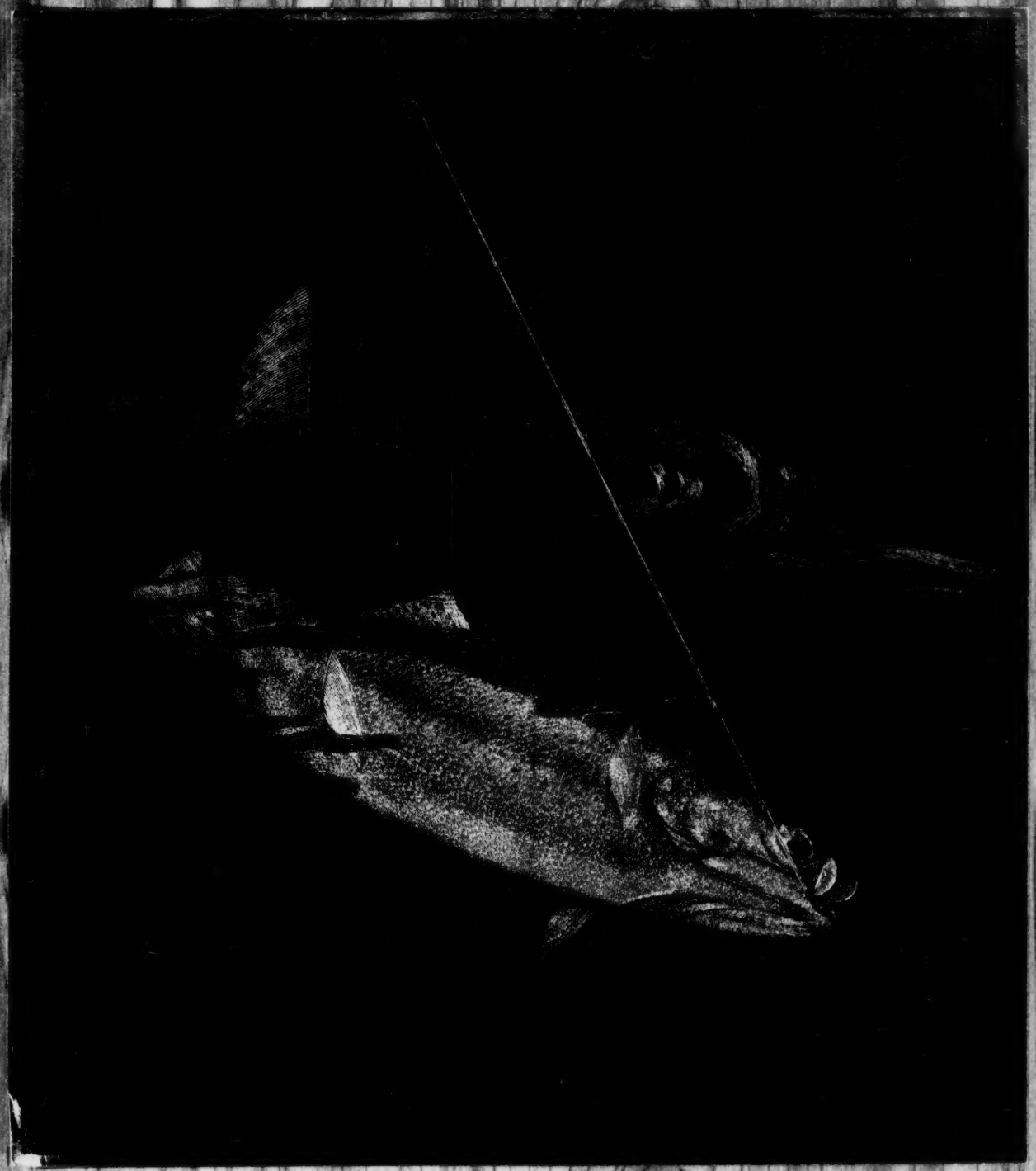
Group of automatically produced embossed labels and seals showing a variety of possible effects and shapes. Photos courtesy Cameo Die & Label Co.

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Quality is that intangibility which is never actually bought—you get it as your due share of every worth-while transaction. . . . . Foxon offers you new and stimulating ideas plus quality that stands unquestioned in the field of **Embossed Foil Labels, Seals, Tags, Box Wraps and Foil Displays.**

The Foxon Company

PROVIDENCE RHODE ISLAND

REPRESENTED IN ALL PRINCIPAL TRADING CENTERS – SAMPLES AND IDEAS OFFERED GLADLY ON REQUEST

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Labels

That "Speak Up" and Win Sales



LABELS · CHRISTMAS SEALS
COUPONS · STAMPS · FOLDERS
OUTSERTS · GUMMED PAPER AND
SAFETY PAPER PRODUCTS

A unique all-around printing service is offered you by Eureka.

Our self-contained plant is equipped with complete, up-to-the-hour art, photographic and plate-making departments.

Specialized facilities under one roof include equipment for gumming, perforating, numbering, calendaring, coating, lacquering, slitting, spot-sheeting and even safety paper making.

Here you will find all three major printing processes: *letterpress, offset* and *gravure*—each ready to serve you best for the particular job at hand.

Whatever your package and label printing problem, you will find us welcoming the opportunity to work with you.

EUREKA SPECIALTY PRINTING CO.

SCRANTON, PA.

New York: 11 W. 42nd Street **Chicago: 228 N. La Salle St.**

Merchandising and Informative Tags

Tags provide a simple and efficient form of marking and identification, particularly for products where the use of adhesives and labels is undesirable. In the last few years, such tags have increased in importance with the growing trend towards the supplying of detailed quality information to the consumer. New regulatory rulings will probably accentuate this trend in the future.

While perhaps the greatest extension of the use of tags has been in the textile and garment fields, they are also widely used on sporting goods, electrical equipment, furniture, luggage, building supplies and on many drug, cosmetic and even food products.

Tags frequently solve problems arising from the necessity of supplying the consumer with information relating to the product. Such tags give you a certain method of getting your sales message across at the point-of-purchase. Both retail sales people and shoppers see the particular points about your merchandise that you want them to see. Pertinent questions are answered by these printed salesmen before they are asked.

The growth of consumer movements demanding definite product information and F.T.C. rulings on textile and fur tagging have contributed to the widespread use of the informative merchandise tag. But long before, smart merchandising men saw the value of providing exact descriptions of materials used and details of construction in crisp factual terms.

For products consisting of a number of units, tags serve as identifications after the outer package has been destroyed. Frequently tags are used on otherwise unpackaged products as the only available means of carrying necessary identifying and informative data to the consumer. Tags with special finishes are also widely used. For instance, lacquered marking tags are practically standard in the meat packaging industry, because they are scuff-proof, alkali-proof, and grease-proof, and meet the most exacting marking tag requirements in many other industries, too.

Stocks: A wide variety of tag stocks is available, such as coated tagboard in many thicknesses and colors, tagboards laminated with metal foil in gold and silver, and other such grades to meet the customer's needs. Recently special tag boards have been developed of the "safety paper type" with an allover water mark design worked into the sheet to prevent counterfeiting.

Printing: Tags may be printed in one, two, three, four, or five colors on one or two sides, from type, line-cuts, and Benday or halftone plates.

Attaching to Article: String in different grades and colors is, of course, the most common method of attaching, but many other methods are available, such as button slots (of various kinds), barbs, wires and metal clips. Frequently, where none of these devices is suitable, it is possible to develop a new method of attaching. There are few articles that do not lend themselves readily to the use of one sort of tag or another.

1. A group of lacquered tags as used for meat products, textiles and metalware. 2. Tags are achieving increasing use for informative labeling preserved after the wrap is discarded by the consumer. Photos courtesy Dennison Manufacturing Co.

1



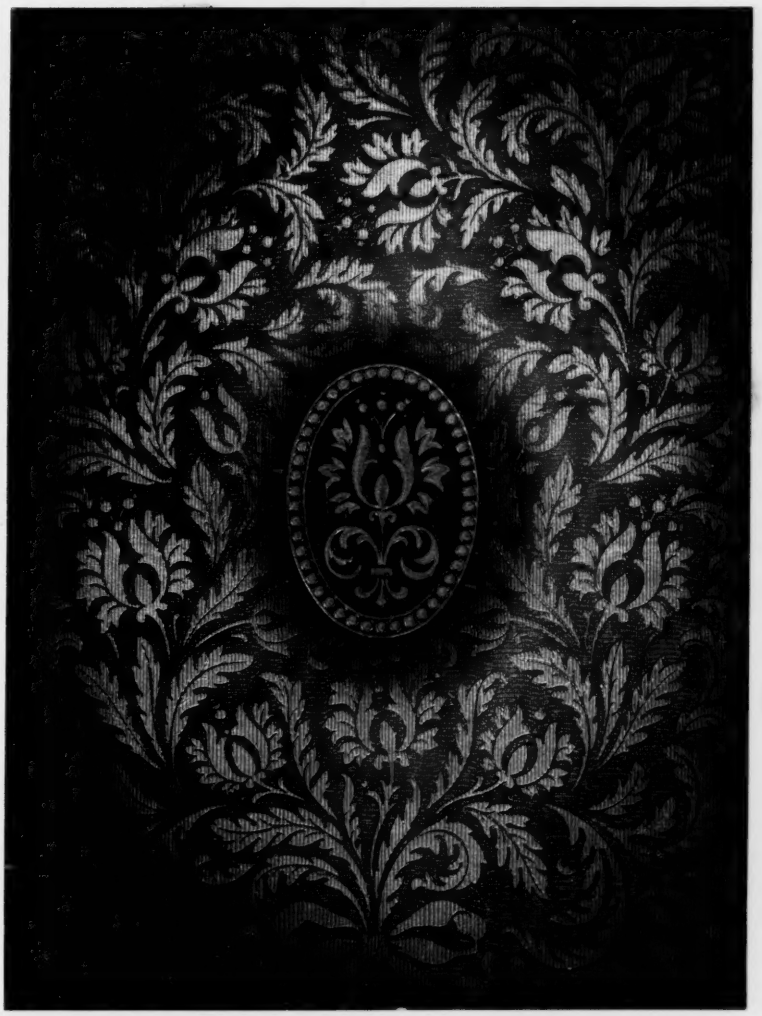
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BROCADE

A CAMEO CREATION



An Entirely New Technique
Designed and Produced by

CAMEO

DIE AND LABEL COMPANY

DESIGNERS and CRAFTSMEN
154 WEST 14th STREET
NEW YORK, N.Y.
WATKINS 9-8484



ENGRADEL

TRADE MARK

U. S. PATENT NO. 1803836

TRANSPARENT DECALCOMANIA LABEL LEADS THE WAY TO BETTER PACKAGES

We are the originators of transparent film decalcomania labels which have found a permanent market among that wide range of quality manufacturers in every field who desire a distinctive form of trade mark identification which will not mask the beauty nor destroy the transparency of their packages.

They can be applied in your own premises as and when desired and UNDER YOUR OWN SUPERVISION. Most important, they can be applied to round, flat, octagonal and irregular shaped containers, and application costs are surprisingly low. They are available in all colors, single and multiple.

PALM, FECHTELER & CO.

220 West 42nd Street, New York, N. Y. — 21 East Van Buren Street, Chicago, Ill.

BOSTON CLEVELAND BUFFALO

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Types of package inserts. Rear row: Branded insert with transparent cellulose band, over-end insert, machine applied; collar label, hand applied; inner-carton insert, machine or hand wrapped; Outsert applied to bottle. Front row: Neck band insert, applied to bottle; under-label insert, and envelope insert.

Package Advertising Literature

by **ROBERT REA BROWN***

Package advertising, as a means of building sales, contemplates the merchandising program as being divided into two phases. The first phase covers the effort to secure new buyers of a product, while the second phase is directed toward making larger consumers and regular customers of those new users or trial buyers. It is in connection with this second phase that package advertising principally applies.

One school of thought in merchandising disregards these two phases and concentrates its entire effort on the getting of new customers, in the belief that once a person has tried the product, he will continue to use it. The other school believes that customers must be held, rather than taken for granted and that they offer a fertile field for increased sales of a product. Consequently, a special effort is planned to go into effect after the sale is made. In any event, the effectiveness of any merchandising plan varies indirectly with the turnover of its regular customers and it is on this premise that package advertising bases its case. While less splashy than the single phase program which proceeds with the assumption that new users can be gotten faster than customers are lost, sponsors of package advertising are firm in the belief that it is less costly and more profitable to make a special effort with the customer after the sale is made, as a means of retaining his loyalty and increasing his consumption of the product.

The keynote of increased customer sales lies in the degree of customer satisfaction. Granting the inherent

* President, Outserts, Inc.

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The simple story told by the Dennison Tree is the story of packaging in all its phases. At a glance you see your opportunity for packaging help of a variety seldom found in a *single* organization. What you also see is an opportunity for co-ordinated packaging. Look at the Swank group on the next page for a typical example.



Dennison co-ordinates Swank's design, display and identification in the Jewelry Boxes, Snap-Up Counter Card, Insert and Embossed Foil Tabs illustrated. Your packaging problem, of course, is different, but each branch, each leaf on the Dennison Tree of Packaging represents solutions to hundreds of problems that were different, too. No matter what you make, who buys it or how you sell it, Dennison's general packaging experience is well worth your immediate consideration.

If you have a packaging problem, write Department P 40, nearest Dennison Office today

BOSTON	CHICAGO	CLEVELAND	DALLAS	NEW YORK	PHILADELPHIA	SAN FRANCISCO
Unity Bldg.	62 E. Randolph St.	Guardian Bldg.	Santa Fe Bldg.	220—5th Ave.	Jefferson Bldg.	Russ Bldg.

FACTORY AT FRAMINGHAM, MASSACHUSETTS, U. S. A.

Dennison Manufacturing Co.

2 BIG REASONS Why Leading Industries Choose NATIONAL Labels and Wrappers

Many, many factors go into making a selling label. Two, however, are most important:

DESIGN: a colorful dominating pattern, with a wise choice of hues, of illustration, of lettering and typography—a design that compels shoppers to see your brand and recall it favorably. NATIONAL'S design staff is highly skilled in applying these principles to individual and unique labels that will do an active merchandising job for your product.

REPRODUCTION: painstaking engraving, and careful lithography and letterpress printing that faithfully follows and enhances an excellent design. Our work for innumerable users of labels and wrappers is evidence of unsurpassed technical skill. We can state unconditionally that our engraving, printing and lithographing facilities are unsurpassed in the label industry.

THE NATIONAL COLOR PRINTING COMPANY, INC.

EXECUTIVE OFFICES AND PLANT
930 EAST MONUMENT ST., BALTIMORE, MARYLAND
SALES OFFICES
BALTIMORE, NEW YORK, CHICAGO, BOSTON

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merit of the product, there are three effective ways to safeguard customer satisfaction. The first of these is to make certain that the product is used correctly and as easily as is consistent with correct use.

The second way to keep customers satisfied is to supply them regularly and conveniently with suggestions and instructions for using the product in various ways. The most ideal and practical application of this means of retaining customer satisfaction is recipes in connection with food products. Probably the outstanding examples of successful use of recipes, both in connection with the package and available recipe books, are General Mills Flour and Borden's Magic Milk. They both feature their package literature in their publication advertising as a plus service to the housewife.

A third means of keeping customers satisfied is to supply them with institutional information in connection with a product. For example, a young mother, as a prospect for canned baby foods, is interested in the company behind the product, its research laboratories, its source of raw foodstuffs, their care in preparation, the appearance of the plant in which it is packed, etc. Such institutional advertising will not be referred to every time, but it will be available to new users and to those regular customers who have forgotten about the product story and are tempted to switch to another brand.

In some instances, it is not necessary to cover these contingencies by package literature with every product, particularly where they enjoy rapid turnover or where sales are made in multiple units to a single customer. In such situations, it is possible to present the literature in every other package, or every fourth package, or it may be done seasonally or at regular intervals.

Any sales promotion effort in connection with a product, whether it be a one-time proposition or carried over a considerable length of time, must be judged not on how many trial buyers it gets, but on how many it keeps. In practically every such promotional campaign, package literature has a part. Whether it be merchandising a premium plan requiring coupons and premium illustrations, running a contest in connection with the product, cross advertising other products, sampling new products via coupon, or any other plan based on customer interest, package advertising can do an effective and economical part of the selling job.

Who should bear the cost of package advertising? Until comparatively recent years, the cost was borne by the production department. This undoubtedly got its start in the early days when package literature was used as packing and commonly known as "stuffers." No thought was given to the appearance of the unit, the typography or the character of the copy contained therein. Under these circumstances, no doubt, package literature was rightly charged to the production department as a production expense.

More recently, however, package literature has taken its place in the merchandising sun, with the result that it shows the benefit of expert craftsmanship all the way from the copy room to the final product. It is no longer used for "packing" purposes and definitely does a sales promotion job. As such, it has no place in the costs of the production department and should be borne entirely by the merchandising end of the business. If package literature fails to promote sales in any one of the previously mentioned ways, it should be discarded. On the other hand, if designed to do a selling job, it should be fostered in the merchandising end of the business and paid for there.



Package advertising designed to influence the original purchase. These booklets are visible on the top of the package and may be read by the consumer prior to purchase, thus permitting the literature to influence the original sale rather than merely the resale, as when hidden inserts are utilized.

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Rhapsodies in Box Tops

— Refreshingly new compositions — colorful, harmonious, pleasing — blending delicate pianissimos with convincing crescendos, producing a packaging masterpiece which is the ultimate in artistry and finesse. Rhapsodize your packages that they may strike a sympathetic note with the buyer and elevate their contents to NEW HIGH LEVELS OF POPULARITY.

Box tops, packages and labels, rhapsodized by Krause, are most frequently associated with "best sellers"



Richard M. Krause, Inc.

Designers, Engravers, Printers
52 East 19th Street
New York

Chicago Representative A. J. ANDERSEN
429 West Superior Street

Philadelphia Representative JAMES R. GILMORE
1729 Arch Street

New England Representative ROBERT SHAW
136 Thorne Street, Bridgeport, Conn.





Your PRIDE MARK

Superlatively expressed in the PERFECT-O-CUT Label, Seal or Tag

Proud of your product, aren't you? Proud enough to give it top standing in America's market places with a value-impressive package or distinctive mark of merit.

And practical enough, also, to realize the increased sales, the markets won and held, through dominant packaging and marking.

Whether your pride-mark be most effectively expressed in the complete package wrap, the label, seal or tag innovation, there is a PERFECT-O-CUT application that T & T designers will gladly work out with you. Your inquiry is invited.

In our 70th. Year

The TABLET & TICKET CO.

1021 WEST ADAMS STREET, CHICAGO, ILLINOIS

NEW YORK
115 EAST 23rd ST.

SAN FRANCISCO
507 MONTGOMERY ST.

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Types of Package Literature Units

Co-product inserts: In this form of insert, the printed literature is inserted in with the actual product by hand or automatically by special insertion machinery. It usually is placed on top of the merchandise as a last operation before closing the package.

Due to reactions of inks, certain non-poisonous vegetable compounds should be used if the product requires it. Government regulations are strict and specific in this regard. Usually single-leaf inserts are used, due to the fact that with finer products such as flour, etc., a folded insert will bring out considerable of the product when the insert is removed. Specially oil treated papers are used with oily products such as canned sardines, shoe polish, silver polish, etc.

Inner-carton inserts: Placed along the side of the bottle or jar. They can be inserted by hand or special inserting machinery. They are removed after the bottle or jar has been taken out. Due to the fact that they usually cannot be seen unless the carton is examined after the bottle or jar has been removed, such inserts are often made inexpensively to allow for a high percentage of waste.

Over-end inserts: This form is inserted over the end of the cartoned jar, tube or bottle to make more certain of its not being overlooked when the carton is opened. This requires a longer form of insert, a narrow multiple fold and breaking the insert over the end of the container. They can be inserted either by hand or special inserting devices on the cartoning machine at a high rate of speed.

Banded inserts: A banded insert is one which is confined to an un-cartoned container by means of bands consisting of various materials. Most widely used is the rubber band. This is strictly a hand application. Other banding materials are kraft paper and transparent cellulose. This operation is usually done by hand, although special automatic machinery can be built. The transparent cellulose band is often used for protection of the under label as well.

Under-label inserts: This form is carried by means of inserting the folder under the label. It can be done by hand or by means of specially built automatic machinery. In some cases the label portion holding the insert is left unglued in order to allow removal of the folder. There is danger, however, of the folder slipping out in handling. To overcome this the folder or the label is spot glued which requires that the label be torn in order to remove the insert.

Envelope inserts: In this case a separate envelope is labeled to the back of the container by hand or labeling machinery and the folded insert is placed in the envelope by hand.

Main drawbacks of this form are the bulkiness of the combined envelope and insert and the inaccuracy of spot labeling at high production speed. Its commendable point is to be found in the envelope serving as a container for re-insertion after the insert is read by the consumer.

Collar band: This usually takes the form of a single sheet with a die-cut hole. However, Neher-Whitehead & Company of St. Louis have developed a patented form-fitting collar which has been used extensively in the dairy field. These reach the dairy sealed together ready to go on the bottles.

Special banded label: This form consists merely of a printed strip of paper or other material which is wrapped around the container or product. A special form called Ad-Seal-It can be applied automatically in bread wrapping machines. It gives an over-lap sealed band around the wrap which carries the consumer advertising message.

Extra wrap: This form consists of a secondary wrap around the container which serves primarily to carry package advertising. The best example is to be found in the extra wrap on the Crisco can where the inside surface of the wrap is devoted to recipes.

Tag form: With this method a string is used through the eyelet of a card, folder or booklet to tie it to the merchandise. This is most commonly done with such utensils as kitchen ware which do not offer opportunity for other means of package advertising. It is usually a hand operation.

The Outsert form: This consists of a folder so constructed as to remain confined on the outside of a bottle jar or carton. It will not open up in shipment or on the dealer's shelf; yet is readily opened by the consumer. No carton is necessary nor is a band needed to confine it to the container since it is labeled directly to the container surface. Outserts are supplied complete ready for application. They can be labeled on to the container by hand or by any standard semi-automatic or automatic labeling machine at regular labeling speeds.

A new development which has made regular canned products such as fruits and vegetables available for this type of consumer promotion, is the Outsert Labeling machine. It is a high speed labeling unit that will spot label Outserts on the outside of containers at speeds up to 200 units per minute. This can be set into the production line and maintain normal can production speeds without additional handling.



A group of outserts as folded ready for application to packages. Note how each carries instructions for opening in the form of an arrow or tab. Photo courtesy Eureka Specialty Printing Co.

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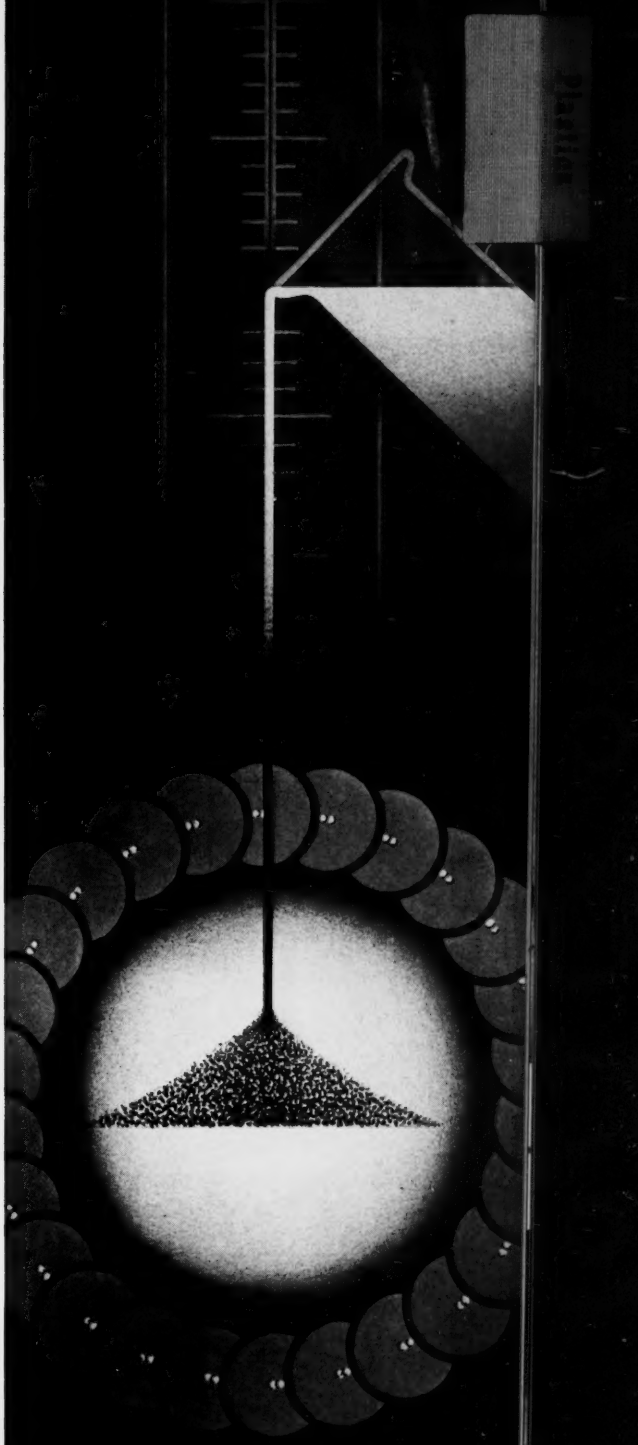
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PLASTICS

SECTION EIGHT

Pages 255 to 286



THERMOPLASTIC MATERIALS

THERMOSETTING PLASTIC MATERIALS

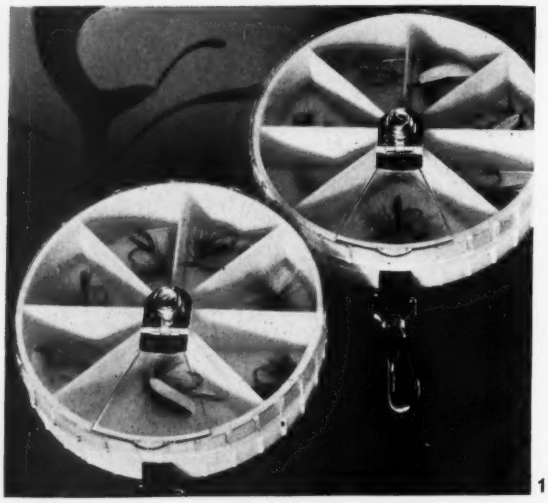
CAST PLASTIC MATERIALS

PLASTIC MOLDING METHODS

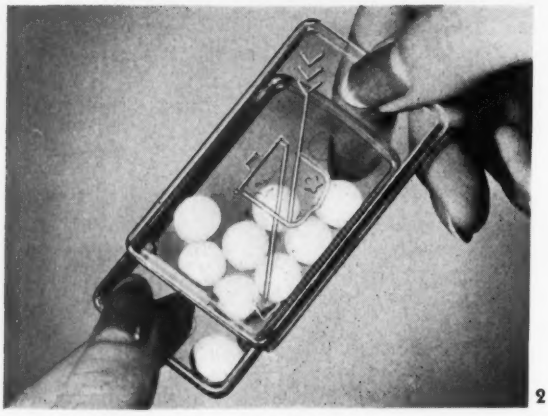
STOCK MOLD PLASTIC CONTAINERS

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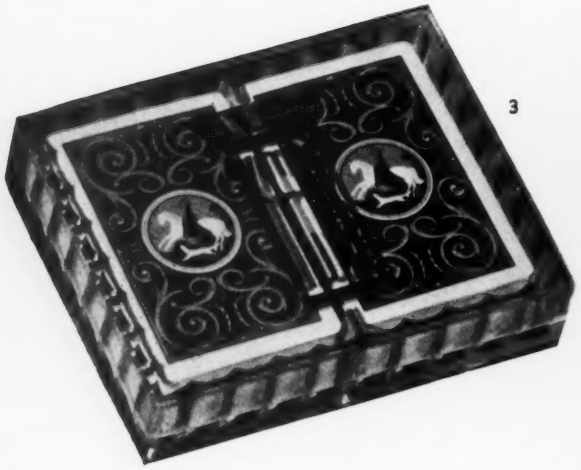
Thermoplastic Materials



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Cellulose acetate thermoplastic materials, like the cast plastics, are available in sheet, rod and tube form. However, their principal application in packaging is as molding materials where they are supplied to the molder in pound form and are usually molded on the newer types of injection molding processes. Their colors range from sparkling clear crystals to dense opaque and include numerous mottled effects and imitations of natural pearls, onyx, tortise shell, amber and woods.

The surface of the molded articles takes a high lustre which adds to the beauty and color of the material. Thermoplastic materials can be used only on those applications where they will not be subjected to heat since they soften and lose their shape when heated beyond a given point. Their major application in packaging—in terms of volume or poundage—is as a sheet material in the transparent container field. However, numerous applications do exist in which these materials have been injection or compression molded as boxes and cases, frequently in conjunction with metals.

Newer thermoplastic materials such as Polystyrene and methyl methacrylate have recently come into use for a number of special applications. The former has been used for acid resistant closures because of its inertness to chemical actions and bids fair to have wide application in this field. The latter materials have been used for some displays and display packages where their transparency has proved an important factor.

More difficult to manufacture are the transparent acrylic and methyl methacrylate plastics which have

1. Fisherman's fly box molded of cellulose acetate, equipped with a transparent cover. Courtesy Tennessee Eastman Corp. **2.** Polystyrene pill box and cover for purse or pocket use. Courtesy Bakelite Corp. **3.** Transparent card box molded of acrylic resin. Courtesy E. I. du Pont de Nemours & Co., Inc. **4.** Transparent purse premium for powder and lipstick, molded of acetate.

4



CIGARETTE HUMIDOR



CIGAR LIGHTER

Plastic Molded Display Packages

Custom molding of display packages of distinction has been our major interest for over seven years. By specializing in the designing and molding of fine display packages, we are able to bring to you the results of our experience in developing new ideas on finishes, decoration, designs, and economical methods of production.

The concealed Rathbun Spring Hinge permits a handsome clean-cut appearance that is most desirable. This construction—respected by packaging engineers and designers—is the simplest, most effective and foolproof hinge in use today.

The show windows of leading stores in nearly every city of this country demonstrate the results of our efforts.

If you wish to add to the sales appeal of your products, we urge you to take advantage of our experience and full cooperation. Our designers will gladly offer appropriate and distinctive ideas for attractive Display Packages. We will also be pleased to send samples of our past work for your inspection.

RING DISPLAY BOX



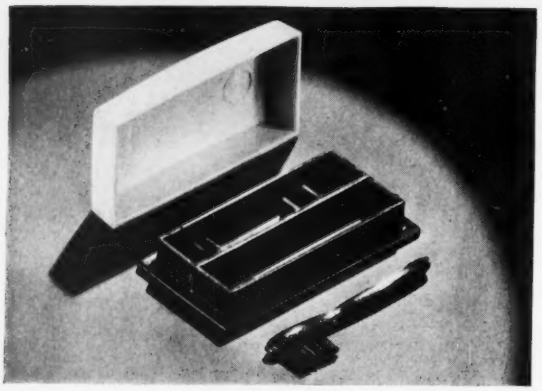
Rathbun MOLDING CORP.

Salamanca N. Y.

XUM



5



6

reached the commercial stage in the past three years.

These materials, which have the permanent transparency of plate glass with less than half its weight, are molded by conventional plastic molding methods. They are of the thermoplastic variety and, therefore, may be molded with injection presses where the size of the part does not exceed the capacity of present presses of this type. Steel molds are necessary and the material is fairly high in price. These facts might seem to constitute a handicap but when weighed against the advantages offered by no other material there is every indication that these resins will gain in application as rapidly as they are made available to the packaging field.

To begin with, the plastic is more resilient than glass and is not easily broken. This means that it can be used wherever glass might be used if it were not too fragile to be practical and didn't require special handling in packing and shipping to prevent its becoming broken before it ever reached the retail store. Transparent resin, molded to any shape, has every advantage of glass in display. Merchandise enclosed is just as visible as though no container were there. No special precautions are needed for packing and shipping except ordinary precautionary measures to prevent scratching. And since the material is much lighter than glass, shipping containers may be of light weight.

These plastics, however, must not be confused with thermosetting types and are not suitable for applications which must come in contact with uncommonly high heat when in use.

5. Tooth brush and tooth powder container of molded acetate. Courtesy Tennessee Eastman Corp. **6.** Mascara box molded of acetate. Courtesy Tennessee Eastman Corp. **7.** Transparent, chemically resistant Polystyrene jigger cap. Courtesy Bakelite Corp. **8.** Utility boxes of acetate with metal inlays. Courtesy Tennessee Eastman Corp. **9.** Alcohol resistant Polystyrene cosmetic closure. Courtesy Bakelite Corp.

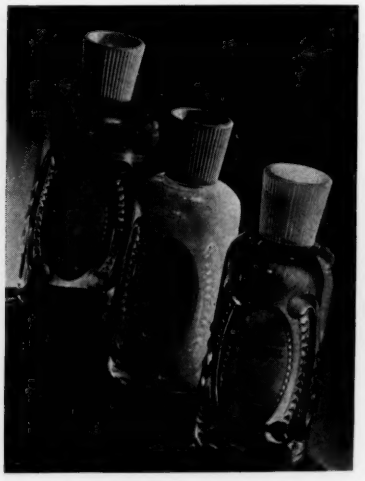
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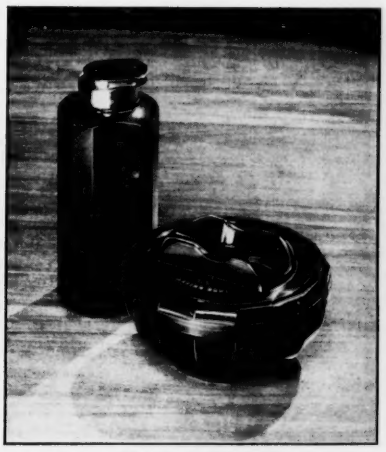


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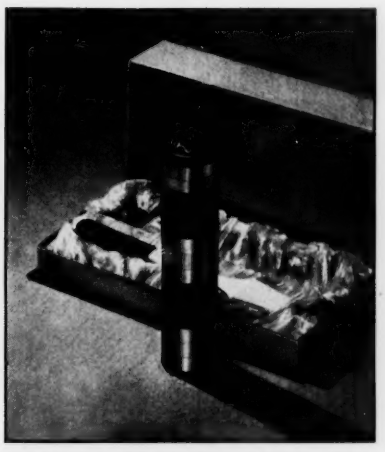
BUYER'S EYE-VIEW OF FIVE "BEST SELLERS"!



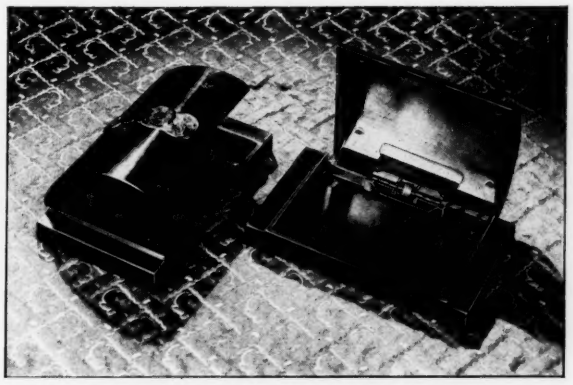
CLASSIC STYLE for the new low-priced Cutex Manicure set, with molded Durez plastics container. Produced in three sparkling color combinations, red, blue and black. Molded by the Norton Laboratories.



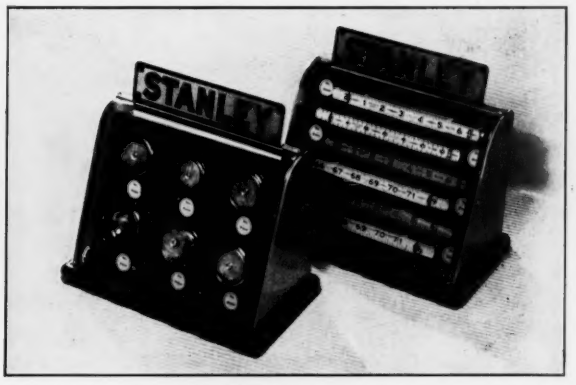
CONVENIENCE is the keynote of this handsome shaving bowl and powder box from the House for Men, Chicago. Both of them are molded of lustrous black Durez plastics by the Van Norman Molding Company.



THE POPULAR PURSE Kitstick made by Colt's Patent Fire Arms Mfg. Company is molded in several easily interchangeable sections of lustrous Durez plastics with encircling gold bands and cameo-type top.



QUALITY PACKAGES for quality products! Molded Durez plastics watch containers for Longines-Wittnauer watches. Molded by the Plastics Division of the Gorham Company, Providence, R. I.



WINNERS in a national packaging contest are these smart Stanley Tool Company display stands which have black Durez plastic bases molded by the Northern Industrial Chemical Company.

You may make the best product money can buy in your field—but if you want to make the ultimate consumer's fingers itch to own it, you've got to put it in a package that says "wrap me up."

The best way to do this, hundreds of manufacturers hold, is to present your product in a package, container or display of molded Durez plastics!

They've proved it, too, by turning out countless sales-plussers like those shown here. Brilliant, colorful packages that beckon the most sophisticated eye. Ingenious displays that know no limit of design or function. Compact, sturdy containers that protect their contents as surely as they show them to advantage!

Our engineering staff would like to tell you more about this versatile material that has done so much to help merchandising go modern. For information, samples and suggestions write Durez Plastics & Chemicals, Inc., 200 Walck Road, North Tonawanda, N. Y.

DUREZ PLASTICS & CHEMICALS, INC.

PLASTICS THAT FIT THE JOB

XUM

Thermosetting Plastic Materials

The thermosetting plastics—i.e., those which once molded change their chemical construction and assume a permanent unchangeable form—include a number of subdivision groupings. For the general purpose of identification, the two major groups of thermosetting plastics are phenol-formaldehyde molding compounds and urea-formaldehyde molding compounds.

Phenolic plastics are the oldest thermosetting plastics. Ten years ago the use of phenolics in the packaging field would have been talked of as poundage. Today, while similar figures might be employed, they would denote tonnage. In their early days in packaging there were a few molded caps and boxes, but it has only been in the last few years that plastics have really come to the front. Now they are near the top of the list of packaging materials. There are many reasons why this rapid advancement has taken place.

When these phenolic plastics first made their appearance they found quick acceptance by the buying public. Most people like plastic articles—a great enough incentive to cause any merchandiser to investigate their use. When they did, they found in this phenolic plastic a material that had exceptional designability—that could be formed into almost any shape or design—that was available in many colors. The finished articles came from the mold ready to use with a high lustre molded in, that couldn't be worn or washed off, wouldn't tarnish or rust. They were poor conductors of heat or cold and had excellent mechanical qualities such as light weight with great strength, resiliency to shock and low density. Above all, they found costs to be comparatively low. They found a few disadvantages which it is well to point out for comparative purposes. Consider closures, for instance. In the older days a standard material was used which had a slight odor, was somewhat resistant to acids and mild alkalies, had little non-bleeding and bleaching qualities, was not particularly flexible from the molder's standpoint and did not cure fast enough for low cost production runs.

Today, the buyer finds none of these disadvantages.

1. Molded phenolic powder jar and shaving bowl. Courtesy Durez Plastics & Chemicals, Inc. **2.** Phenolic gift set boxes equipped with patented spring hinges. Note clip in box top driven into the molding. Photo courtesy of Durez Plastics & Chemicals, Inc.

1



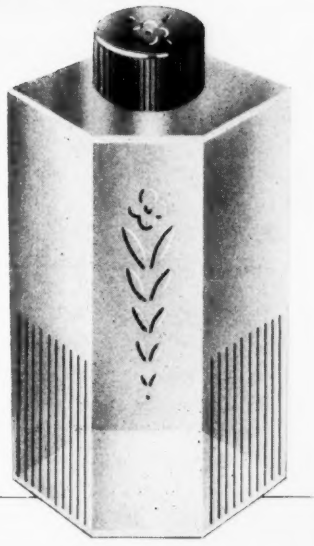
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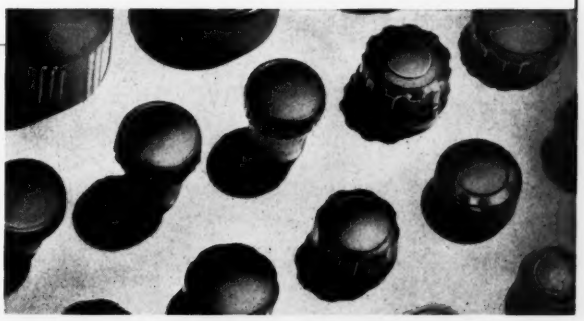
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One product wears "Just a cap"



Another product is A Design Ensemble



Resinox and a Skilled Molder

can make this difference

After the carefully designed container is completed—what about the closure? "Just a cap" may offset the whole effect, may definitely cut down the sales power of the completed package. That's why it pays to check up with a capable molder on Resinox . . . the plastic material that gives *ensemble appearance* at "just a cap" cost.

Starting with the accurate chemical-resistant formulations and wide range of colors available in Resinox, skilled molders can produce closures of real individuality . . . with contours, patterns or trade marks that keep the closure in harmony with the whole package.

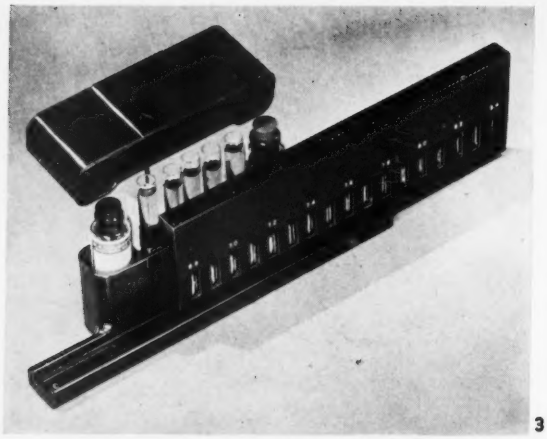
Resinox also finds wide use in complete containers, with re-use advantages that appeal to every customer. It is one of the family of six Monsanto Plastics—all of which have countless applications in the packaging field. For full information and names of fabricators, inquire: MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield, Massachusetts. District Offices: New York, Chicago, Detroit, St. Louis, Los Angeles, Dayton, Montreal.

MONSANTO PLASTICS
Cellulose Acetate • Cellulose Nitrate
Cast Phenolic Resin • Vinyl Acetal
Polystyrene • Resinox Phenolic Compounds

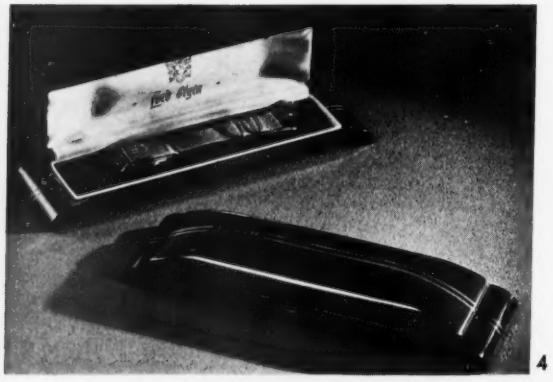
Sheets • Rods • Tubes
Molding Compounds • Castings
"Vuepak" Transparent Packaging Materials

MONSANTO PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND



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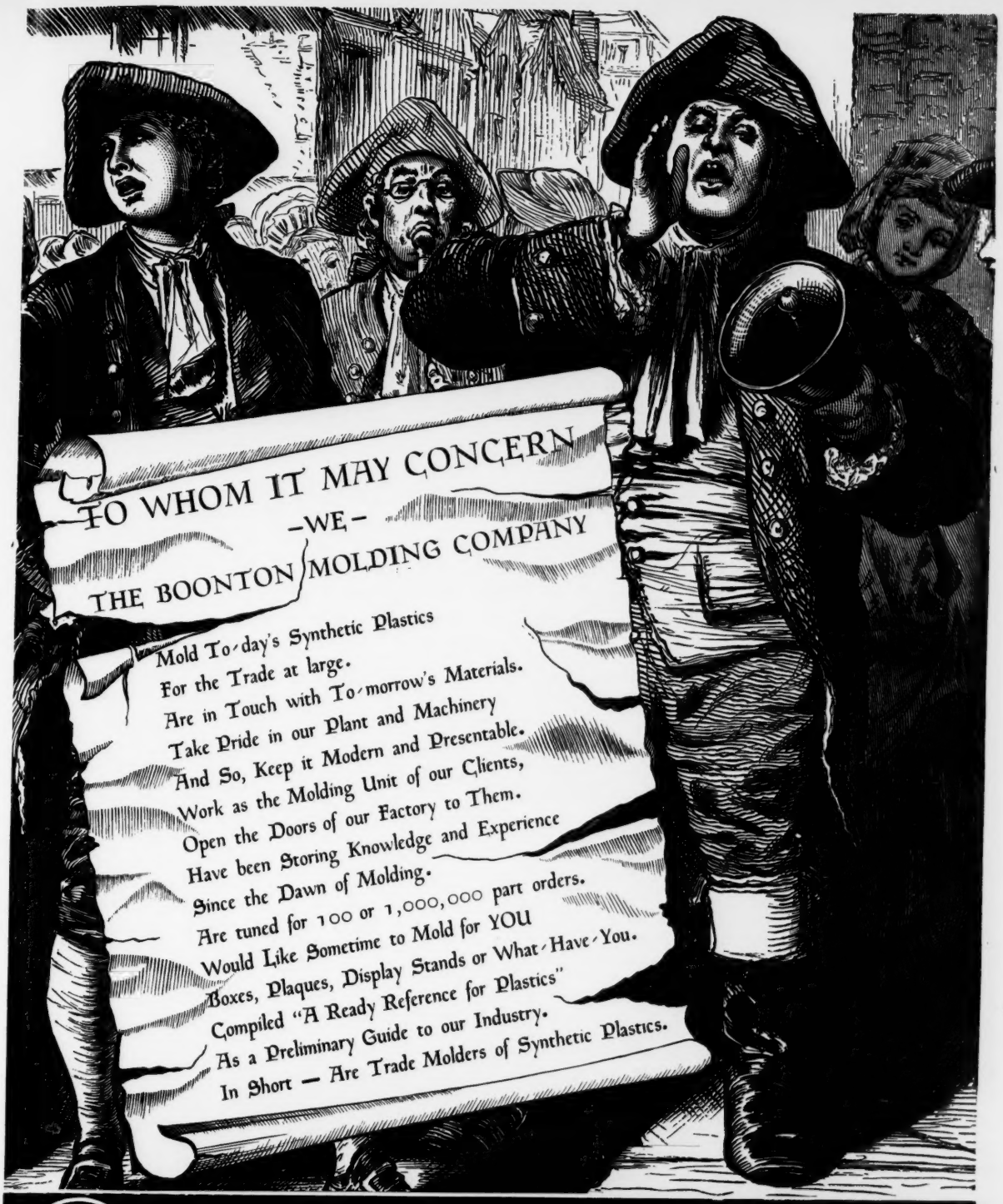
3. Phenolic molded color comparator set. Courtesy Durez Plastics & Chemicals, Inc. **4.** Urea molded watch box with satin lining and spring hinge top. Courtesy Gorham Co. **5.** Two-piece precision tool box molded of phenolics in contrasting colors with rivet held lock and hinges. Courtesy Durez Plastics & Chemicals, Inc.

Phenolics are available today that are completely odorless; that have great resistance to acids and mild alkalies; that are non-bleeding and non-bleaching. He finds practically any color except certain pastel shades in the thermosetting phenolics. In the opaque thermosetting group he finds richer or denser blacks brought about by improved dyestuffs. He finds far greater strength and durability. And from the cost standpoint he enjoys lower prices in the thermosetting phenolics. This is because of improvements in manufacturing, molding machinery and more flexible materials. Molding materials have recently been put on the market which may be automatically stripped from the mold while hot—a tremendous advance over former materials. Also, a material has been formulated which has cut down cure time in the press from around eighty seconds to thirty seconds. It's quite easy to realize what these two improvements alone have meant from the cost angle on comparatively large production runs.

There are several factors which the packaging buyer should give heed to when considering a phenolic plastic container or closure. Plastics are generally impractical for very small runs unless the item packaged is in the higher priced group where finery in dress can be well afforded. There are, of course, hundreds of stock molds available through the many custom molders. These can often be employed to great advantage—even for comparatively small runs. Generally, however, a private mold is highly desirable to permit individual design and when considering this mold there are a few principles which may be followed to advantage. The first step would really be to call in a custom molder or a service engineer from one of the materials manufacturers who will go over these and other points carefully. Design, naturally, is of the greatest importance. Designing for plastics, that is from the standpoint of making finished blueprints, is not at all like designing for metal stampings or castings, for example. Actually, the best advice is to disregard what you may know of metal stampings and castings because the characteristics of plastics are entirely different.

If an article requires strength throughout, there are several methods of securing it. Domed or hemispherical shapes are stronger than flat topped ones. Fillets at corners or filleted ribs are advisable. Extra thickness of material at points of stress may be obtained by beading or reinforcing ribs. Attachment or assembly inserts should be at filleted corners if at all feasible. This helps to keep "flow marks" from the molding operation where they show least. Shapes that call for loose sections in a mold to obtain undercuts should be avoided if possible for economical molding. Small side holes can often be drilled and large ones continued to the top to draw straight. Ribbing can be used to hide "flow marks" under the hole. Threads can be molded into round parts and, by means of loose mold sections, into other shapes. In so doing, the wall thickness should be figured from the inside of the thread instead of overall. Very sharp edges may be obtained but are generally inadvisable from the handling standpoint and it is best to "break corners" slightly. Stippled effects and sharp-edged lettering sometimes cause sticking in the molding operation. Fine, straight draw ribbing and round edge lettering will definitely assist in eliminating this possibility. Incised lettering and design in plastics mean higher die cost than raised lettering. When incised lettering is most desirable it is best to employ a narrow style if such lettering is to be wiped in. Double or triple line lettering is better for wider letters because there is less likelihood of

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BOONTON MOLDING COMPANY

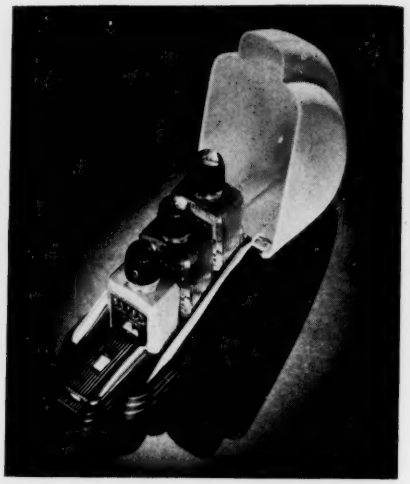
MOLDERS OF PLASTICS · PHENOLICS · UREAS · THERMO-PLASTICS

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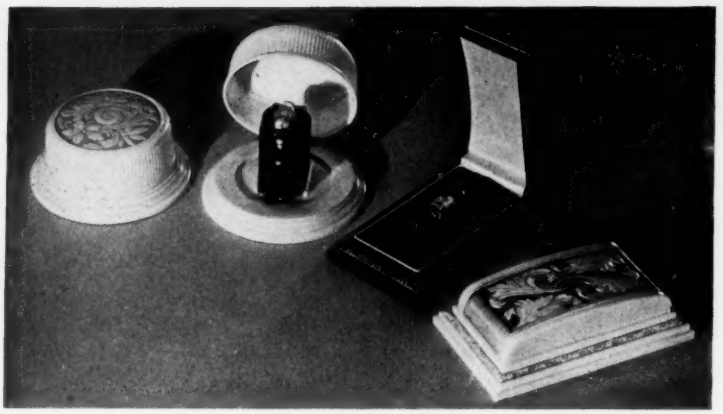


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6. Set of urea plastic cosmetic boxes and jar closures. Courtesy Beetle Products Div. of American Cyanamid Co. **7.** Combination phenolic base and urea top form this cosmetic kit. Courtesy Bakelite Corp. **8.** Jewelry boxes molded of urea with color on relief decorations. Patented spring hinges control angle of opening. Photo courtesy of Rathbun Molding Corp.



8

the pigment being wiped or worn off. "Low" bas-relief designs and letters catch highlights as well as do high relief decoration, yet are more easily kept clean.

Generally speaking, anything that can be engraved in steel can be molded on the surface of a plastic piece. Relief and intaglio sculpturing, inlays of metal or other contrasting materials, decals, labels, branding, are the most commonly followed methods of marking plastics. Incidentally, the field is still wide open for smart use of other materials as components of the plastic piece. Leather, real or imitation, wood, rope, canvas, cloisonne, printed papers, cork, laminated materials, glass, reed, fabrics, can all be combined with plastics for new and strikingly unusual effects. Actually, so little has been done along this line that it does not seem unreasonable to predict that a swing in this direction would result in materially increased sales of almost any item so packaged.

The actual manufacture of the molds or dies used in the production of plastic pieces is indeed a specialized line in itself. Therefore it appears advisable to re-emphasize the importance of having a custom molder or plastic manufacturer's service engineer right in on the ground floor when the buyer is considering a plastic package—be it a container for paper, metal, cosmetics, liquids, or what-nots. They know the problems of molding. They know materials and will be quick to verify the proper one for a specific job should there be any question at all.

Molded collapsible tube caps one-quarter inch diameter and molded radio cabinets eighteen inches high, fourteen inches wide and ten inches deep, fittingly illustrate the scope of phenolic plastic molding from the packaging standpoint. Size, therefore, hardly has to be considered, for the greatest percentage of retail packaging comes within these specifications. Looking back over the years we find the largest number of users of plastics for containers or closures in the drug and cosmetic industry. Even there the possibilities are far from exhausted. Witness one of the latest plastic containers—for cleansing pads—which has literally swept the country overnight. Incidentally, that use points out one of the outstanding characteristics of phenolic plastics. When the idea of packaging facial tissues was conceived and decided workable, they were first put out in metal containers. Because of the moisture in these saturated pads, the metal rusted and corroded. Plastics were tried and some of them swelled and cracked. It remained for the phenolic manufacturer to produce a molding com-

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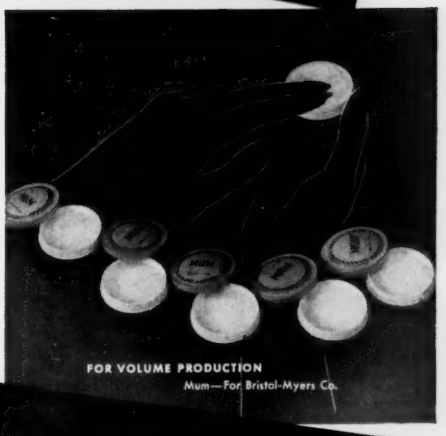




VISIBILITY—*PERFECT!*
SERVICEABILITY—*EXCELLENT!*
SALEABILITY—*FAST!*

These are three of the many "-abilities" that make BEETLE* packages move merchandise. Here are a few of the products it has helped to succeed in the face of stiff competition. There is virtually no limit to the variety of its applications in the packaging field.

Let the versatility of this modern product of chemistry make *your* next package an *outstanding* sales success! The research facilities of the American Cyanamid Company are available in working out the solution of new problems in plastic packaging. Write us for facts about the possibilities that Beetle offers.



BEETLE PRODUCTS DIVISION OF AMERICAN CYANAMID COMPANY
38 ROCKEFELLER PLAZA • NEW YORK, N. Y.
**Trade-mark of American Cyanamid Company applied to urea products manufactured by it.*





Beetle **it's all color and in all colors**

XUM

pound for the base of these containers that was completely moisture-proof.

Urea plastics are of the molding type and are available in lighter shades of color than most of the phenolic group. This is because urea syrup, before the condensation process which reduces it to powder has taken place, is a water-clear liquid. It, therefore, gives full value to pigmentation and even pastel shades may be definitely controlled. Even white and ivory are common in ureas. To the manufacturer whose package depends upon daintiness of color for its selling appeal, urea may be the ideal molding compound, provided, of course, that its chemical properties are suitable to the job. Although higher in price than the phenolic compounds, except those lighter shades recently introduced, this advantage of color and translucency is often worth the difference in many applications. Urea moldings are insoluble and inert, resistant to greases, oils, and solvents. They have no taste or odor and there is little or no tendency to show dirt even with constant handling.

Ureas have been used widely for tube and bottle caps because their broad range of colors offers a distinctive note of attraction while goods are on display. They are frequently chosen for better harmony with labels than would be possible with dark colors. They are especially suitable, too, for intimate use in the boudoir and bath and for that reason have found general favor in packaging cosmetics and toiletries.

Ureas are often used in conjunction with plastics of the phenolic group. Their gay colors contrast pleasantly with the brilliant blacks and dark shades of the less expensive material. Urea covers of ivory or pastel shades create a harmonious ensemble with the smooth lustrous finish of black phenolic boxes and jars.

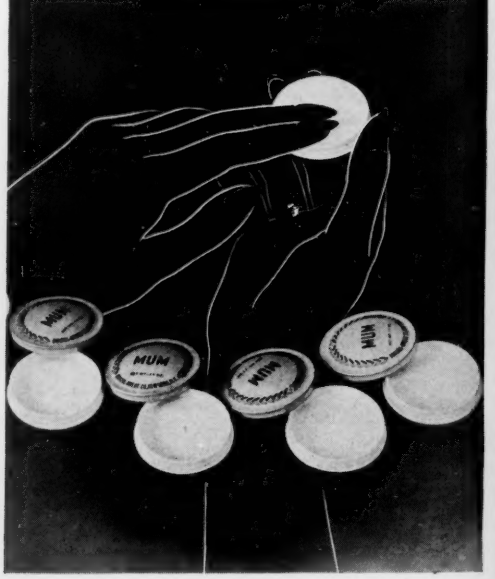
Urea moldings combine harmoniously with the newer transparent resins providing the color they, in themselves, lack. Rich colorings supply a background of warmth and appeal which accentuate the cold clarity of the transparent part.

Transparent phenolics are a new variety of thermosetting plastics and capable of resistance to heat and impervious to moisture to a greater degree than those materials we have just discussed. Their first appearance in this country was for chemical laboratory use as beakers, measuring cups, and such. Their next indication of commercial use is for cups, saucers, plates, and other tableware for aircraft and trailer service where sturdy, lightweight dishes are the paramount requirement.

Transparent phenolic in its natural state is amber in color, but with the introduction of pigments, these materials may be colored with any of the deeper shades of red, blue, or green so popular in modern glass. By the admixture of various coloring compounds surprising mottled effects are easily obtained.

9. Deep blue urea plastics are used for these watch boxes equipped with patented spring hinges. Courtesy Plaskon Co., Inc.





10. White urea plastics are combined with metal slip covers to form these purse sized deodorant containers. Courtesy Beetle Products Div. of American Cyanamid Co.

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Shown are a few of the Kurz-Kasch Plastic Powder and Rouge containers used by such great names as Elizabeth Arden, Luxor, Park & Tilford, Paris Cosmetics, House of Westmore, Maybelline, Richard Hudnut. Many stock molds — in your choice of colors, and in bakelite, plaskon or beetle — are available for your use.



The K-K EMBLEM — SYMBOL OF PLASTIC SERVICE

PUZZLED
by a PACKAGE PROBLEM?

KURZ-KASCH
has the Answer!

The Plastic containers shown on this page are a handful from the hundreds of Kurz-Kasch plastic packages now in use. Whether you select a standard style, or one custom-created for your individual use, you can expect a better package from Kurz-Kasch.

It isn't just molded bakelite or plaskon or beetle that Kurz-Kasch offers. It's engineering and technical skill that masters the jobs that others won't tackle. It's the production facilities that can handle any kind of order in any quantity. It's the experience — decades of it — that stands guard over every order in the plant. These are the advantages that add up to this important fact: IF IT'S A PLASTIC PROBLEM, KURZ-KASCH HAS THE ANSWER.

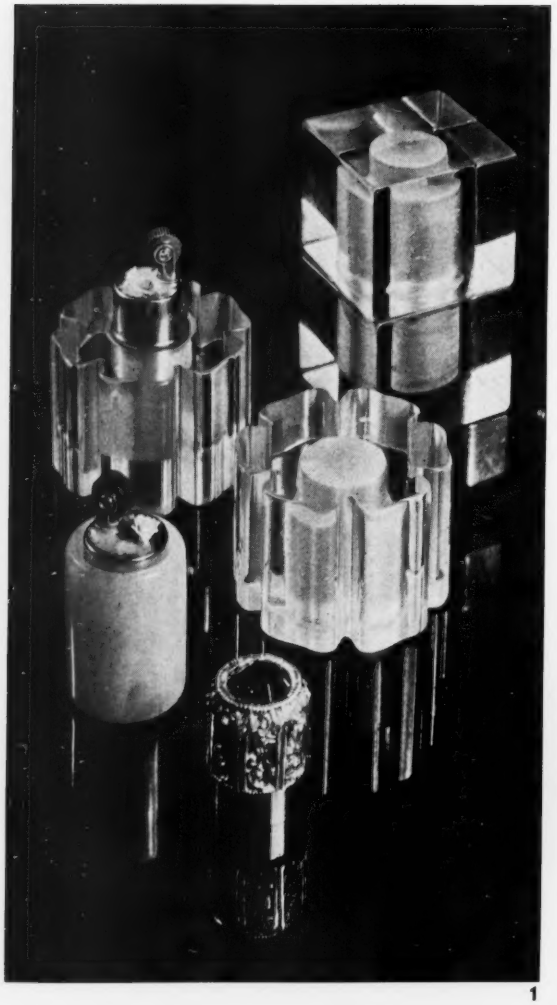
If you have never put a plastic problem up to us — try it. Write describing your product and the kind of package you hope to perfect. We'll do the rest.

KURZ-KASCH, INC.
DAYTON, OHIO

One of the largest exclusive molding plants in the country.

Sales Offices in Chicago, Cleveland, Detroit, Milwaukee, New York, St. Louis, Dallas, Los Angeles, Toronto.

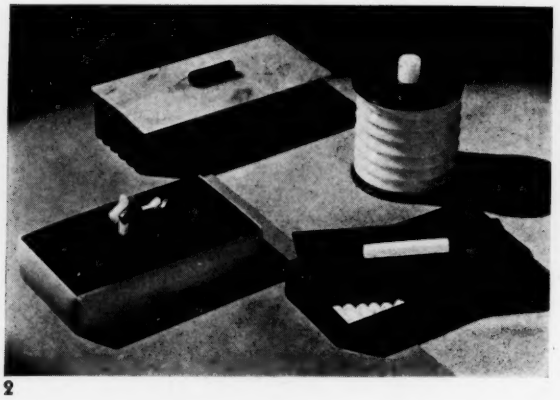
Cast Plastic Materials



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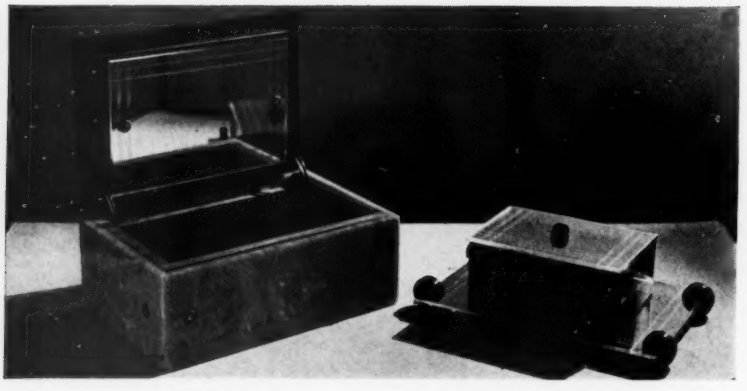
The cast plastic resins are materials which are supplied by the manufacturer to fabricators pre-cast into definite shapes. They are available in sheets, rods, tubes and in a wide range of standard shapes. Their fabrication is by machining and assembling rather than by molding. They have an advantage in package fabrication where a limited number of units is required because mold costs are entirely eliminated. They afford colors practically without limit and all degrees of transparency or opacity are available in these cast materials.

They are formed in inexpensive lead molds, the principal cost being for a mandril which must be shaped from steel to the exact dimensions and shape of the interior of the mold. Mandrils so formed are dipped in hot lead which adheres to the metal and may be driven or "shocked" off when cold. This operation takes but a few minutes and as many molds may be made from each mandril as required. Once made, the molds are filled with the liquid resin and placed in ovens where the temperature is carefully and automatically controlled over a



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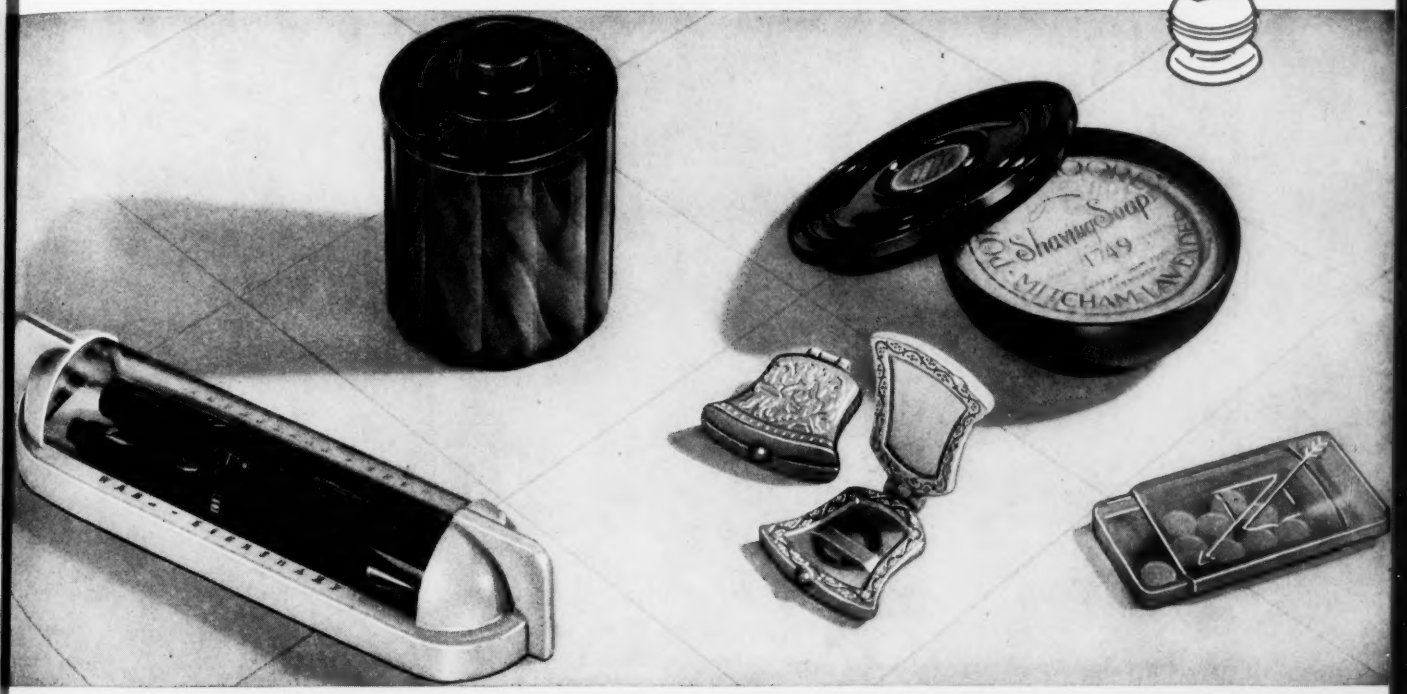


1. Transparent and opaque cast resins as used for lighter holders. **2.** Cigarette boxes of cast resin with knobs of contrastingly colored material. **3.** Cast resins used in combination with glass and mirror to form novelty boxes. Photos courtesy Catalin Corp.

Keep two moves ahead

OF YOUR COMPETITION

. . . with Bakelite Plastics Packaging



RICHNESS OF IVORY obtained by molding display-package from Bakelite Urea plastics.

AMBER-LIKE BEAUTY gained in Transparent Phenolic Bakelite Molded re-useable container.

PASTEL SHADES in novelty wedding-ring boxes of Bakelite Cellulose-Acetate.

MOISTURE RESISTANCE for this refillable soap box from rich black, phenolic Bakelite Molded.

TOUGHNESS, TRANSPARENCY combined in 'One-at-a-time' pill-box molded from Bakelite Polystyrene.

GIVE YOUR PRODUCTS the *dual* sales-advantage of striking eye-appeal and greater convenience... supplement good-merchandise with sales-stimulating packages... by employing Bakelite materials for your package styling. These rich, colorful plastics not only increase display-value, but also insure durability and ease-of-use that outlast the contents of your packages!

There are more than 600 Bakelite materials... polystyrene, cellulose-acetate, urea, and phenolic plastics... now available to aid you in achieving sales-winning effects in package and closure design. They include molding materials, cast resinoids, and laminated stock in transparent, translucent and opaque effects, in a color range that rivals the rainbow.

Gain distinctive sales-advantages over your competition by packaging your products with Bakelite materials. Their lasting beauty, ruggedness and non-corrodibility build goodwill for your products every time the package is handled.

Write for 52-page illustrated Handbook T, "A Guide to Modern Packaging with Bakelite Materials." It contains useful basic facts on successful packaging.

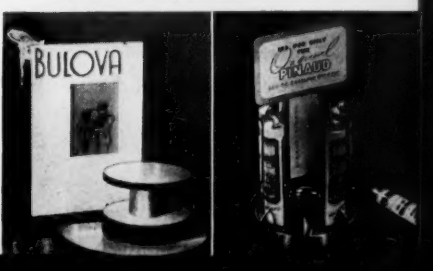
BAKELITE CORPORATION, 247 Park Ave., N.Y. *Chicago:* 43 East Ohio St. · *Bakelite Corporation of Canada, Ltd.*, 163 Dufferin St., Toronto · *West Coast:* Electrical Specialty Co., Inc., San Francisco, Los Angeles and Seattle

BAKELITE

PLASTICS HEADQUARTERS



(*Above*) Bakelite plastics offer unique combination of advantages in closures for bottles, jars and tubes. (*Below*) Bakelite Laminated and Bakelite Molded displays stand long use . . . save replacements.

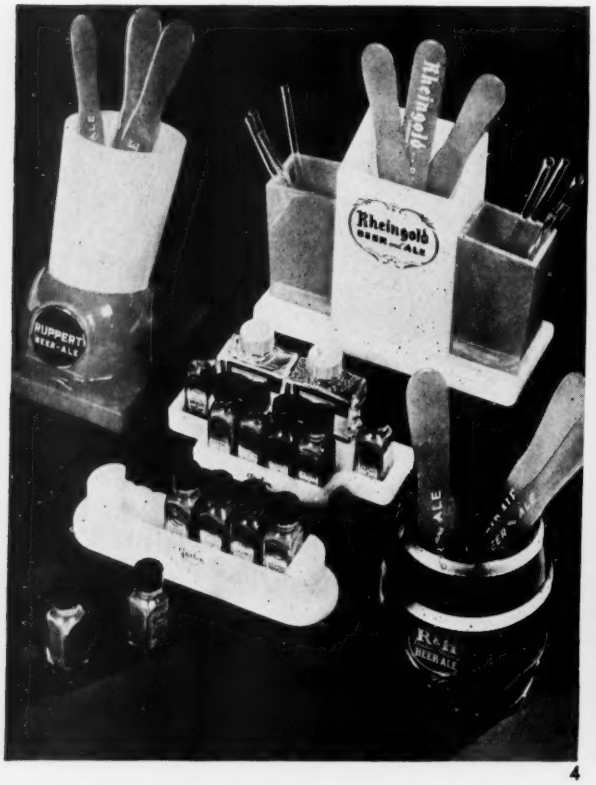


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period of days while the material cures, or polymerizes to its hardened state. The cast shape reproduces the exact finish of the mold and little finishing other than smoothing the "pouring" edge is needed. Polishing is seldom required.

A number of stock cast resins are available in the shape of boxes, box bases, tops, etc. Many manufacturers of cardboard boxes have found it practical to use small bars and knobs cut from rods of cast resin as decorative handles. The wide range of colors of the cast materials give a brilliant contrast with paper, fabric and leather box coverings. They have also been used as knobs and handles in conjunction with transparent boxes and displays made of rigid transparent sheet materials.

In the display field, they find application as display decorations and, when cut by jigsaw, as letters in signs and for similar purposes. They are also used to form the bases and supports for luminous display letters. The limit of their application is only that of the woodworking tools by which they are fabricated.



4



5

6



4. Specially cast plastic forms are used for these cosmetic and bar displays. Courtesy Catalin Corp. **5.** Gift packages and novelties formed of carved, machined cast resins. Courtesy Catalin Corp. **6.** Dispensing rack for nail enamels formed of special casting of opaque and crystal clear cast resinoids. Courtesy Bakelite Corp.

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MACK MOLDING CO.

WAYNE • NEW JERSEY

SALES OFFICES IN NEW YORK CITY, CHICAGO, DETROIT, INDIANAPOLIS AND ST. LOUIS

Plastic Molding Methods

There are two methods in general use for molding plastics. They are known as injection molding and compression molding. Injection molding is rapidly advancing as the most economical method for mass production molding. In principle it is very similar to the die casting of metals. The molding material in the form of granules is heated to a soft flowable consistency in a closed heating cylinder, and is then forced under high pressure by means of a piston through a nozzle in the cylinder into a relatively cold mold. The plastic sets up or hardens quickly in the mold, and the finished parts can be ejected within a few seconds. If the molds are well polished, the parts require little finishing other than trimming off the gates and sprues which can be ground up and re-used.

Injection molding machines are generally automatically operated for continuous production. Temperatures, pressures, and time cycles are adjustable and automatically controlled. The machines have a capacity of from two to six ounces per stroke or cycle, and operate at a speed of ten to ninety seconds per cycle, depending upon the size and wall thickness of the article and the molding properties of the material. New machines with greater capacities are being built at present. Injection molds have single or multiple cavities, the number being limited by the capacity of the machine and the size of the article to be molded.

Injection molding has many advantages over the usual compression molding, the most important of which are high speed production and reduced mold costs as smaller and lighter molds with fewer cavities are used. This method is especially adapted for small boxes and closures when volume production of a uniform high quality is paramount. Because of the plastic flowing character of the material as it enters the mold, it faithfully reproduces the contours of the most complicated molds and permits the use of intricate cores, inserts and shapes which have hitherto been impossible by any of the other processes of molding.

At the present time injection molding applies only to thermoplastic materials, but thermosetting materials have been molded by a similar process called transfer molding in this country for some time. Automatic injection molding equipment for thermosetting material is now in the course of development and specially developed phenolic and urea materials are also being prepared for early usage in this machine.

Containers of large size and many articles of heavy sections are often more economically molded by compression molding. Compression molding differs from injection molding in that by injection the material is heated to a flowing condition outside of the mold, and is then squirted under high pressure into a cold mold; while by compression molding, the material is heated in the lower cavity of the mold, and is flowed under pressure applied in the closing of the mold. The mold itself, as well as the material, goes through a heating and cooling cycle so the rate of production is governed by the efficiency of these cycles.

Compression molds are of two general classes: hand molds, and semi-automatic molds. Hand molds are the simplest and cheapest. They are assembled and loaded

1

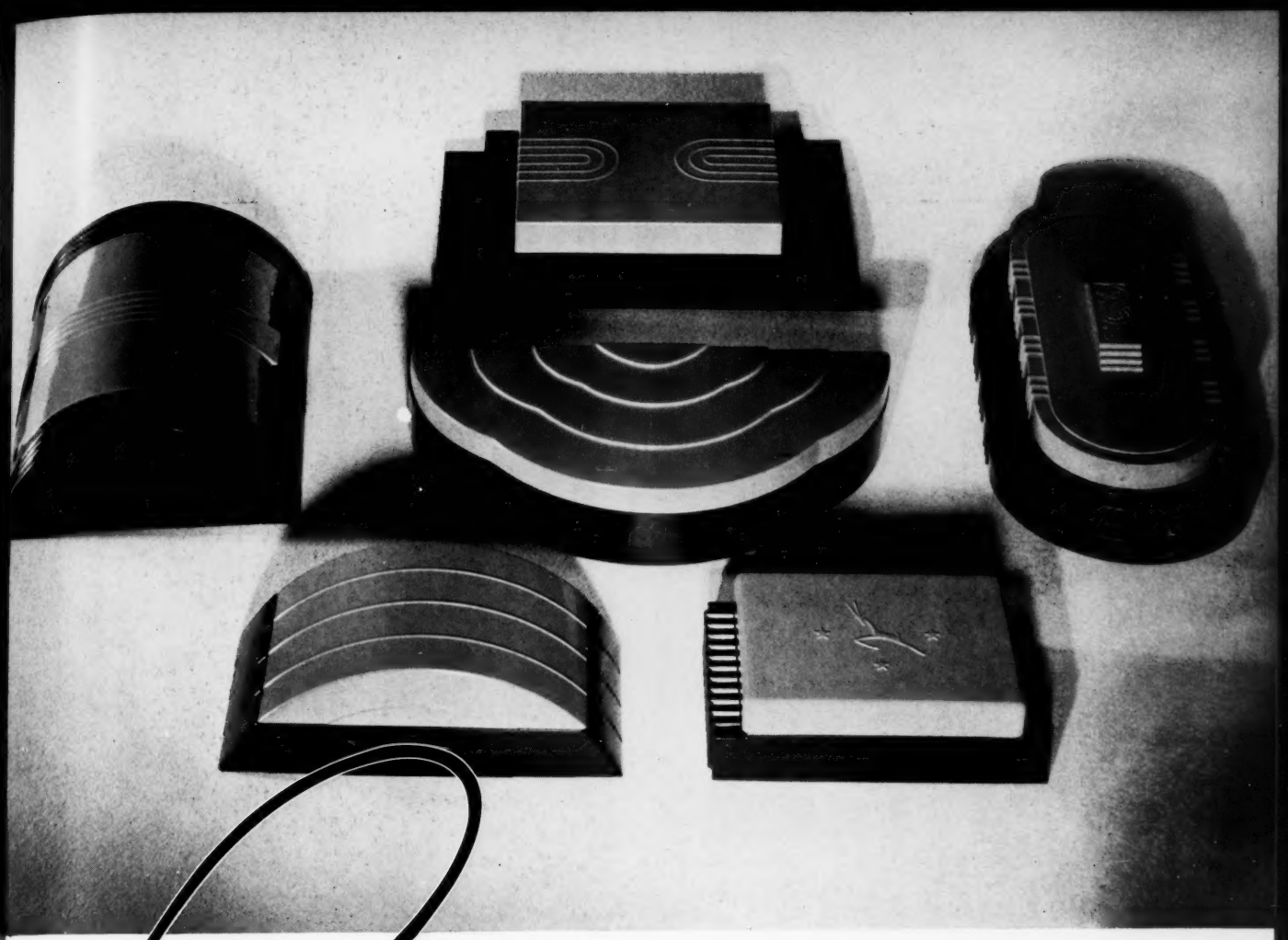


1. Embossed letters and designs printed on plastics. Photo courtesy Color-Kraft, Inc. **2.** Typical application of patented spring hinge construction. Molded of Beetle by Rathbun Molding Corp.

2



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Profit IN EVERY CASE...

THESE attractive molded plastic product packages, strikingly designed for re-use as jewel cases, cigarette cases, receptacles for odds and ends, etc., present a clear case for profit. Not alone by their eye-appealing beauty nor by their sales-bidding finish, but by the qualities molded into them at Auburn, is their profit attraction insured.

Auburn's more than 60 years experience often results in profitable short cuts to quality. Precision die-making, extreme care in molding and a whole series of rigid inspections always insure the plus quality that means plus sales—whether it's a re-use package, a display, or a product itself of molded plastic. On *your* next molded plastic job, call in an Auburn man.

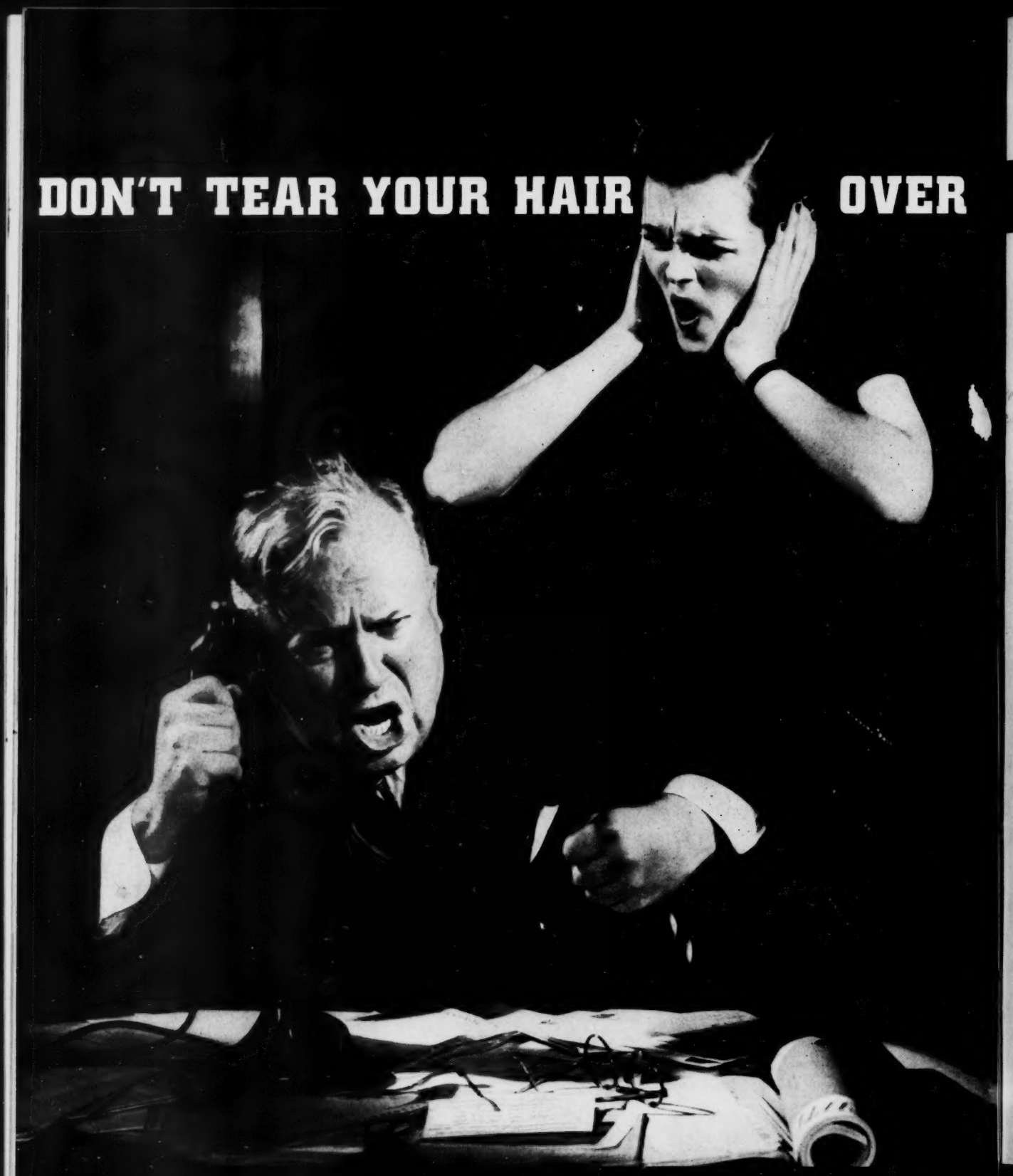
Established 1876

MOLDED PLASTICS DIVISION OF

AUBURN BUTTON WORKS, Inc.

AUBURN, N. Y.—New York, Chicago, Detroit, Cleveland, Rochester, Boston

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DON'T TEAR YOUR HAIR
OVER
Let G-E Design it, Style it, and Make it for You

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ER YOUR NEXT PACKAGING PROBLEM

There are many manufacturers who have stopped tearing their hair and now rely on General Electric for the right package. They have learned the simplicity and wisdom of placing their packaging problem with G-E from the very first inception to the finished beautiful and colorful containers that help sell merchandise.

We say, let G-E . . . .

Design it . . . . . . So that you may be sure of a plastic container that is practical and easy to mold in big quantities. This helps you save money.

Style it . . . . . . So that beauty and salability can be combined with easy moldability. This helps you save money and increase sales.

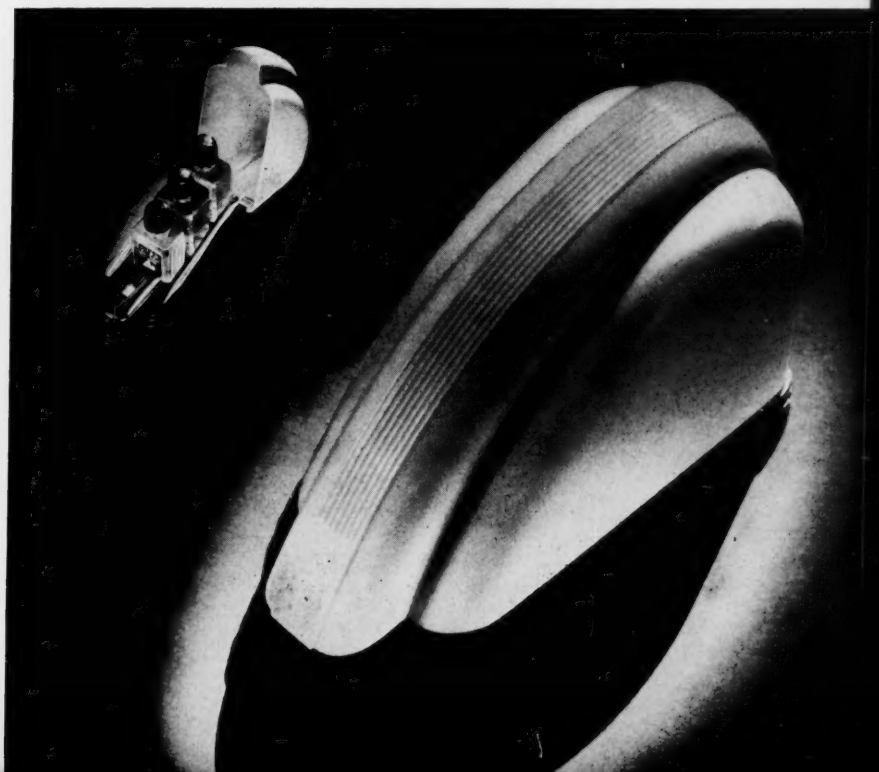
Make it . . . . . . So that your molds are constructed properly and designed to produce in any quantity desired. This helps you save money and makes for steady and uninterrupted production.

Out of Textolite . . Because this plastic material offers durability, fine appearance, permanent colors, economy, and high quality. This provides the best molding material possible for your use.

Cut out that hair tearing for new ideas and sales appeal. Let your next packaging problem become a pleasant experience. Ask General Electric to create it for you and mold it out of Textolite. Write Section J-140, Plastics Department, General Electric Company, One Plastics Avenue, Pittsfield, Mass.

GENERAL ELECTRIC

PD-102

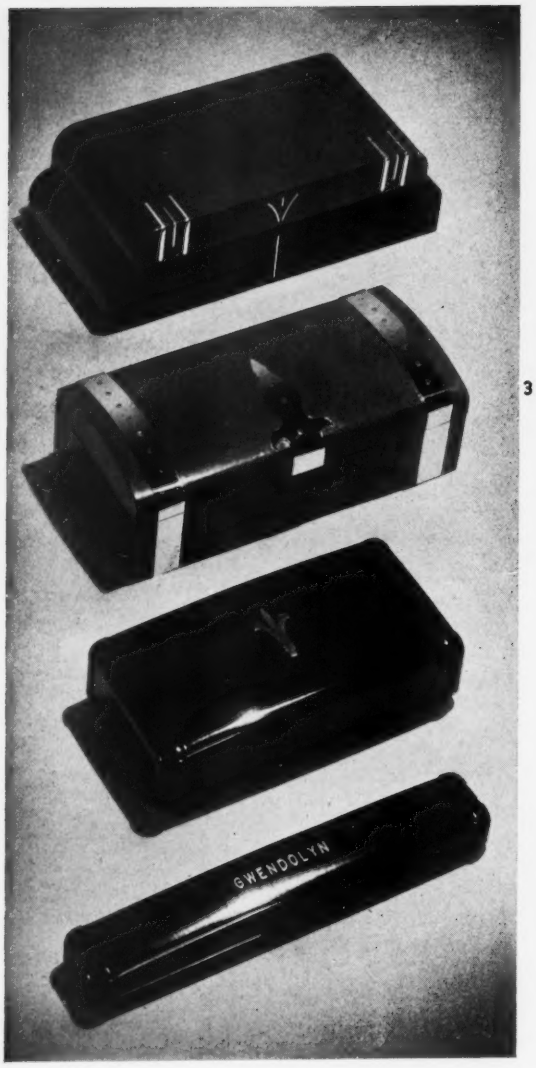


The new 1940 Cutex "Trophy Set." The container molded of Textolite by General Electric

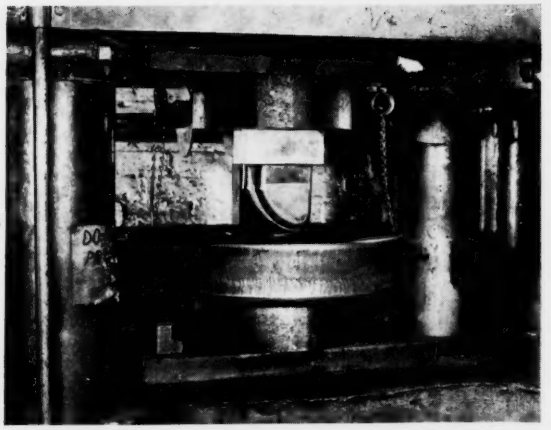
Out of TEXTOLITE

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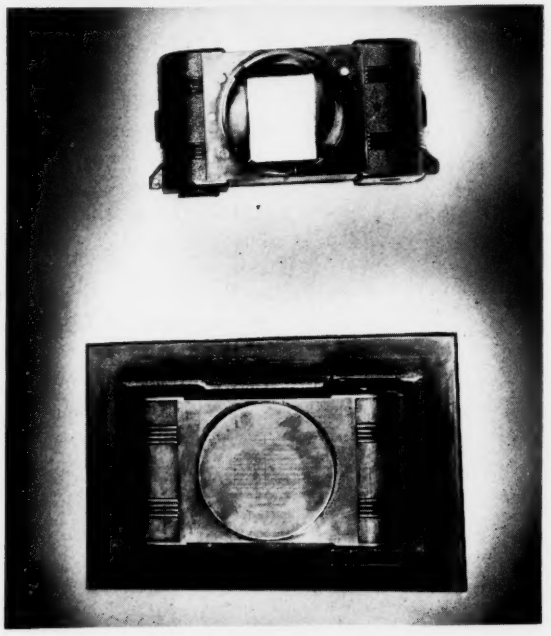
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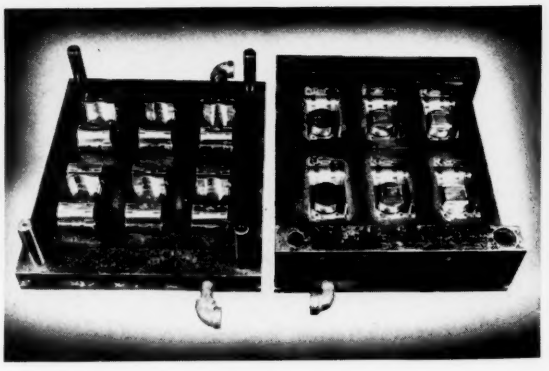
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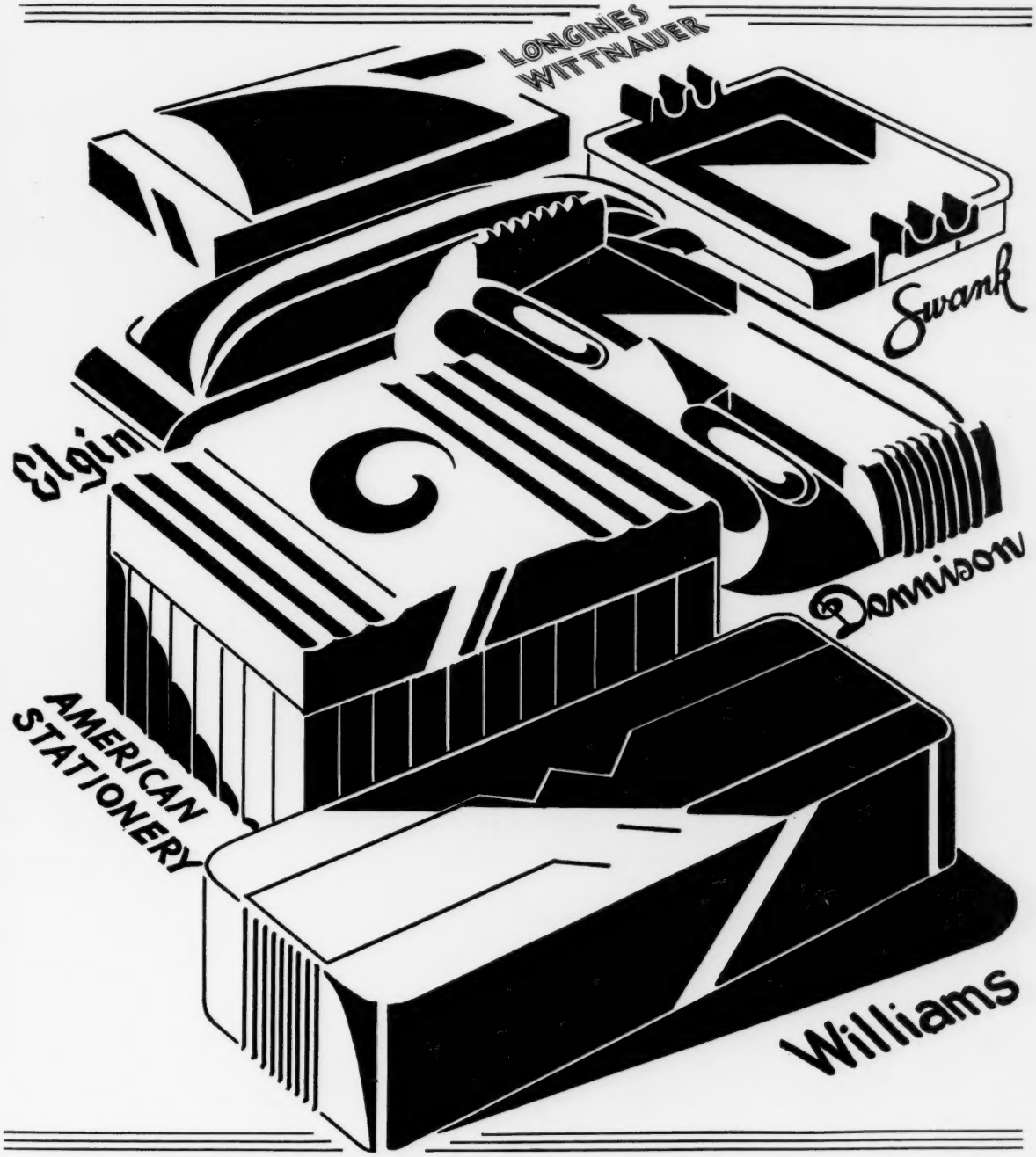
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into the hydraulic press by hand, and are heated and cooled by conduction from the platens of the molding press which are steam heated and then water cooled after the mold is closed under pressure. Semi-automatic molds are attached to the head and ram of the press and are cored or ported for steam heating and water cooling. While this type is more expensive than the hand mold, it operates on a shorter cycle, and is more economical in large scale production. Both types of molds usually have multiple cavities, the number depending upon the size of the article to be molded and the capacity of the press in which they are to be used.

3. New methods have been developed for the application of metal decorations to molded plastics. Photo courtesy Plastic Inlays, Inc. **4.** This illustration shows a hobbing die sinking down into a solid block of steel. **5.** A chunk of steel machined to shape, heated, allowed to cool slowly; then re-heated and cooled again, becomes a hard, tough hob requiring only final polishing. Such a hob is shown above, together with the plastic molded part. **6.** This six cavity mold, in operation at Chicago Molded Products Corp., was produced by hobbing the cavities and then machining them to final finished form.

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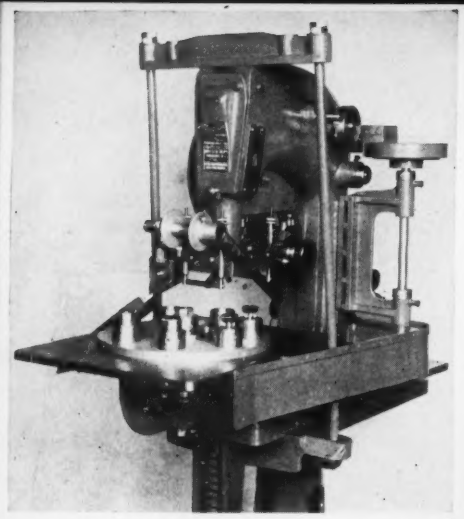
FOR MOLDED PLASTIC PACKAGES OF SUPERIOR STYLE FAMOUS FIRMS GO TO GORHAM



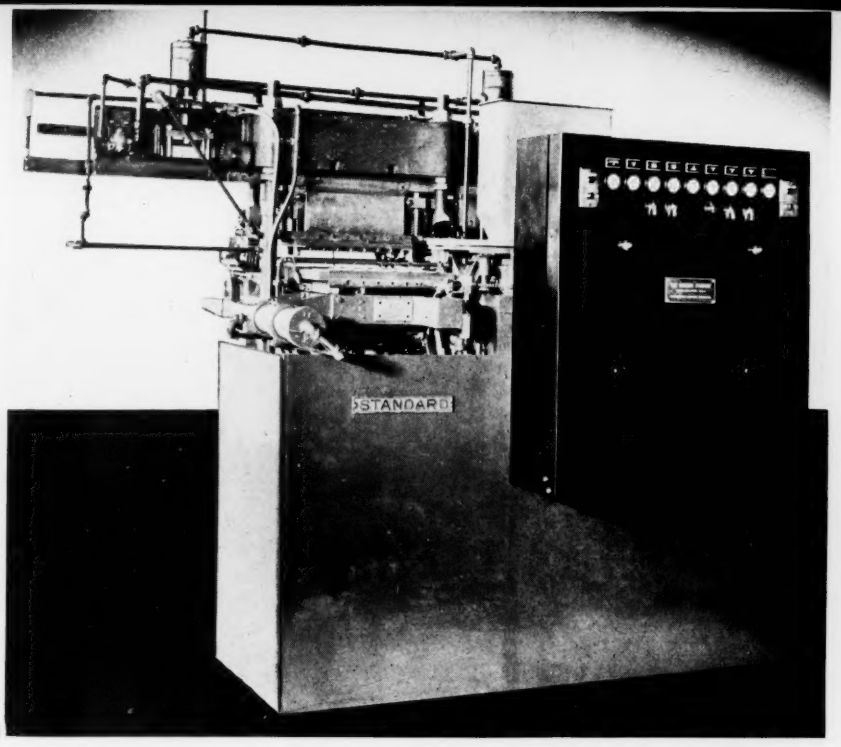
THE GORHAM COMPANY • PLASTICS DIVISION

PROVIDENCE • RHODE ISLAND

whose talent and tools enable them to do the complete job from its conception to the consumer



7

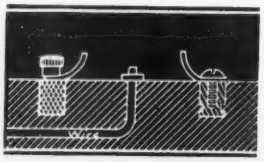


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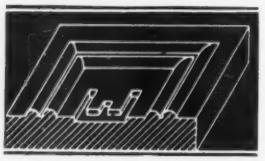
7. This Peerless Roll Leaf Company's press is designed especially for stamping plastic sockets. **8.** The new Standard automatic self-contained press for thermosetting materials. While one mold is under pressure, another is outside the platens, being re-charged for its next pressing. This press is operating at Bridgeport Moulded Products, Inc. and is available through the F. J. Stokes Machine Co.

The design and layout of compression and injection molds is a specialized art. Many factors are involved on whose solution the successful operation of the mold depends. Here again many pitfalls can be avoided by close cooperation between the article designer, mold designer, and package manufacturer. Frequently, minor changes in the design of the article will result in substantial savings in the construction of the mold, and in the production of the article itself.

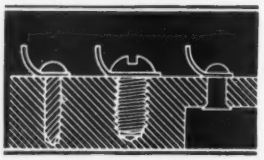
Another development of recent years is the automatic molding press, of which several types are now in use. While varying methods are employed, these presses are essentially similar in a few respects. They all feed measured quantities of molding material into molds,



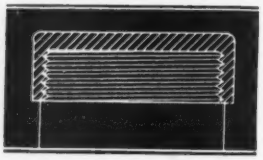
Threaded metal inserts, contacts, terminals, wires and inlays may be imbedded in plastics during the molding process, making later assemblies easier, less expensive and stronger.



Lettering, trade marks, decorative details and ribs can be molded into any plastic piece, provided they permit withdrawal from the steel mold. Simple ones add little to the cost, especially if they can be machine cut or hobbed in the mold.

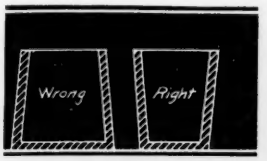


Molded plastics can be drilled and tapped without difficulty, or, if the strain is light, holes can be molded in and drive screws used. Rivets often facilitate assembly, but should be carefully specified.

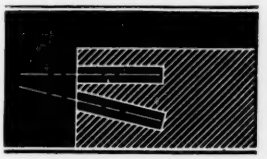


Strong accurate threads can be molded into plastics without extra operations, permitting permanent joining of sections, or easy removal without binding or stripping.

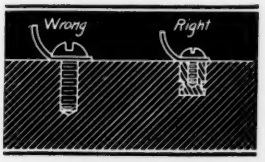
Cavities and holes should usually be straight, without undercuts or projections to prevent straight ejection from the mold. Undercuts can be handled in split molds, but cost more.



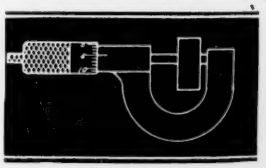
Though practical, horizontal side holes in a molded piece slow the operation and lead to breakage. Sometimes they're necessary, but avoid them if possible. Slanting or oblique side holes are even more troublesome.



Small tapped holes in molded plastics are laborious and not very practical, except where strain is light. Threaded metal inserts are stronger, more permanent. Driving nails in molded plastics is impossible.



Tolerances can be held to plus or minus .002 in. on smaller dimensions, or plus or minus .004 in. on larger. Unless necessary, avoid specifying closer limits. Ordinarily, plus or minus .004 in. is the accepted tolerance for precision molding.



BEAUTY
STRENGTH
ECONOMY

•

Specify

Reilly

INDUR

Plastics

•



The above products, typical of the many types of articles molded from Reilly Indur Plastics, are shown by courtesy of Leviton Co., L. Mundet Co., and Terkelson Machine Co.

● For containers and closures that are beautiful in color and finish, exceptional in strength and economical to mold, specify REILLY INDUR PLASTICS. . . . Articles molded from INDUR combine beauty that means sales appeal with strength that insures maximum service and protection, while permitting lightness of weight in design . . . INDUR molding compounds are manufactured in several grades and degrees of plasticity, and may be had in rich blacks, beautiful mottled effects and striking color combinations.

Samples and detailed information will be gladly sent on request.

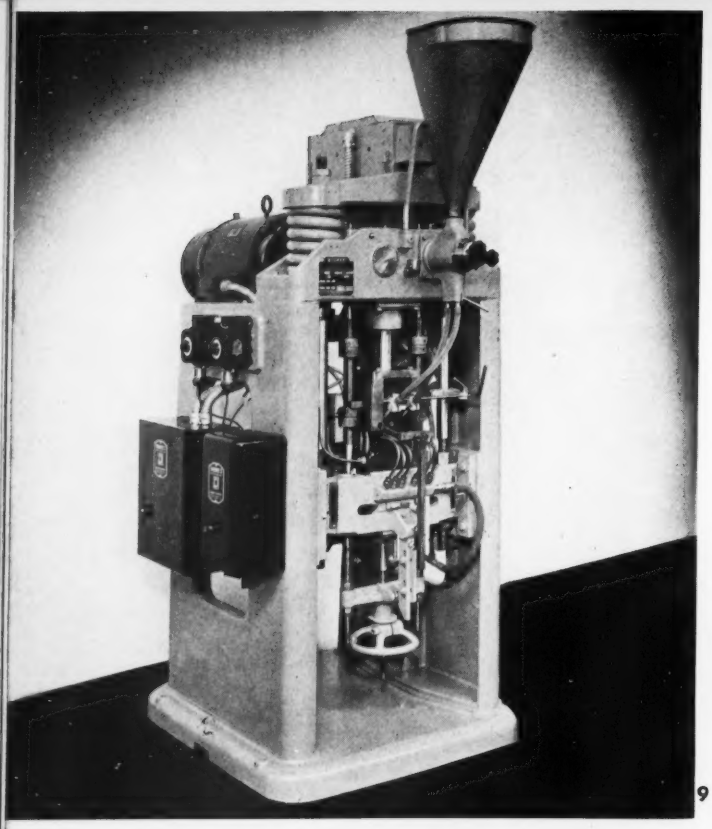
Reilly
COAL TAR PRODUCTS

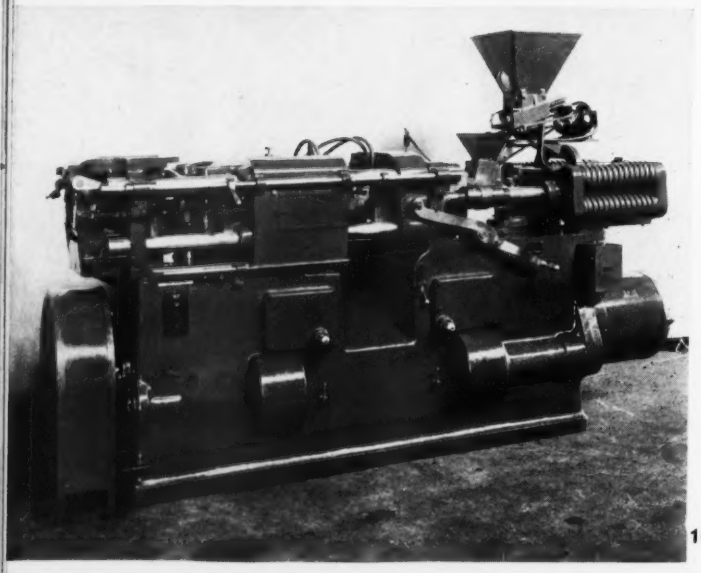
REILLY TAR & CHEMICAL CORPORATION

EXECUTIVE OFFICES: MERCHANTS BANK BUILDING, INDIANAPOLIS, IND.

300 FIFTH AVENUE, NEW YORK — 2513 S. DAMEN AVENUE, CHICAGO — MINNEAPOLIS, MINN.

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automatically time the molding cycle and automatically eject the finished article. At the present stage of their development, they cannot be applied to every package molding, but their field of usefulness seems to be increasing and will, no doubt, play an important role in the future.

The design of plastic molded packages and package parts is necessarily a highly technical and specialized art. Hence, in planning any molded article, the molder should play an important, even dominating role. He can frequently save thousands of dollars for the purchaser by a single word of caution at an early stage in the planning.

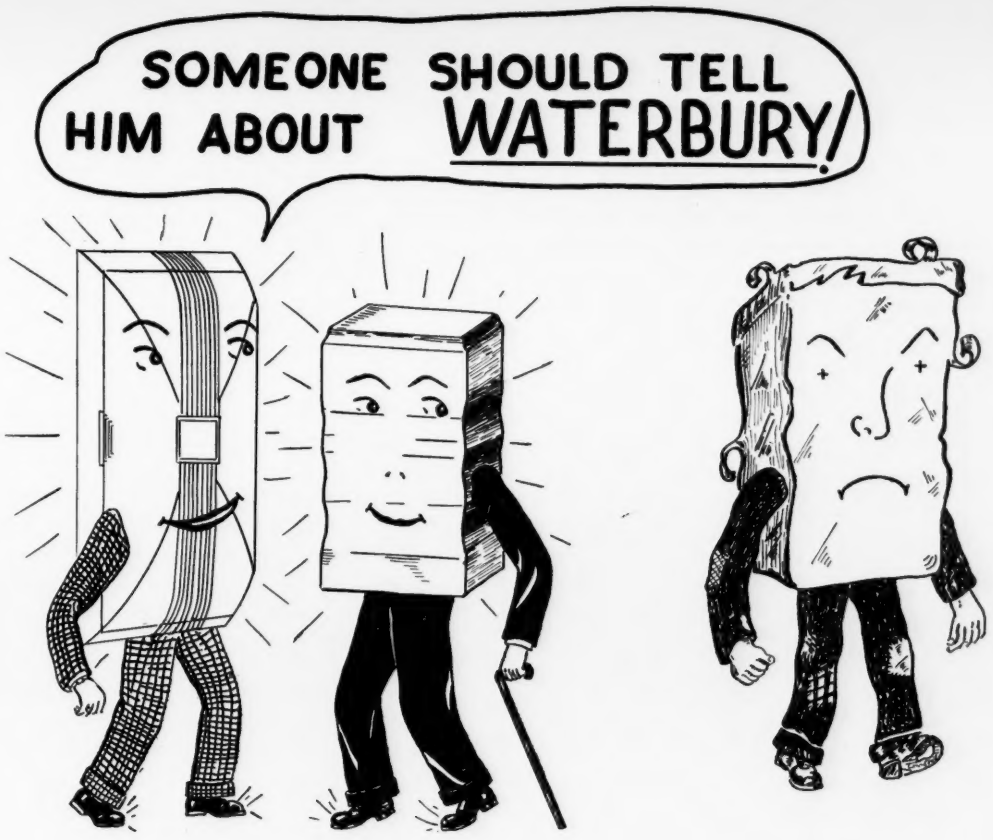
On the other hand, failure to consult him may produce a workable but far more expensive or less satisfactory package. In perhaps no other field of packaging is this condition quite as true as in the plastic molding branch.

When the article has been ejected from the mold, it is not necessarily complete. A number of supplementary operations may be necessary, dependent upon design. If the product is a box, hinges and locks of various types may be required. These may be attached by screws, rivets, or self-tapping screws. A very widely used type of hinge consists of a spring which locks into recesses provided for this purpose in the base and cover of the molded article. The use of this type of hinge requires preplanning since the cover pivots upon a groove in the molded base. The spring's function is principally to hold the cover into this groove and to control opening and closing. Proper planning of the groove and hinge construction can pre-determine the angle of greatest opening—an important factor where the molded box is to be utilized on display.

A number of methods of decorating and identifying plastics—with trade marks, lettering, etc.—have been developed. Roll leaf stamping is widely utilized. Metal inserts of various types are likewise frequently utilized as decoration. Color wipe-ins with recessed lettering or bas relief work require hand operations but are not inherently expensive and are very frequently used on both packages and molded displays.

The use of such applied decoration has contributed not only to the versatility of plastics as a medium for packaging and for achieving sales appeal, utility and beauty. It likewise provides, on occasion, a means of reducing package costs, since such applied decorations are usually less expensive on short runs than decorations formed by the mold itself, since these require expensive mold finishing operations. On longer runs, the cost factor is, of course, not so great and the choice as between applied or integral decoration is more a matter of design rather than one of expense.

9. The Stokes completely automatic molding machine has a 15-ton capacity, with dual feed and individual powder measuring device to each cavity. Output is reported at 13,440 moldings per week. **10.** A 4-oz. capacity De Mattia horizontal injection press that is operated mechanically. **11.** A fully automatic injection molding press produced by Reed-Prentice Corp.



NO self-respecting container would ever suffer the ill sales effects of unattractive appearance—if it could have the benefit of a Waterbury rejuvenation and reconditioning.

Your packaging problem receives individual, specialized attention at Waterbury. It is submitted to a battery of skilled designers, plastic engineers, tool and mold makers, metal workers, assemblers and inspectors.

It may be produced in any plastic molding material and it will be created with a lion's share of style, color, durability and eye-appeal.

In short—if it's a Plastic Package, Waterbury will make it better!

WBCO

PLASTICS DIVISION

THE WATERBURY BUTTON COMPANY

MAIN STREET EST 1812 WATERBURY, CONN.

NEW YORK CITY • BOSTON • PHILADELPHIA • ROCHESTER • DETROIT • CHICAGO • TORONTO • CLEVELAND

Stock Mold Plastic Containers

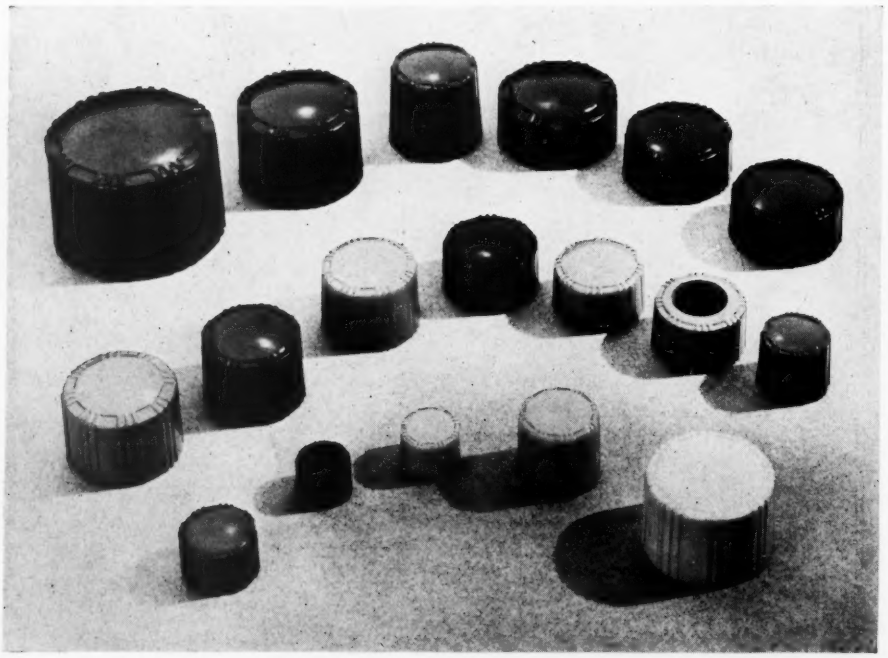
There are probably many manufacturers who would like to package their products in plastic boxes if they knew such boxes could be obtained within the limits of their appropriation for containers. It has probably never occurred to some of them that many such boxes are available if they were only able to dig out the source of supply. It is to these manufacturers that this article will be of special interest.

Original mold costs have been frequent barriers to manufacturers whose requirements for a few hundred boxes of exceptional quality to package a certain item would not permit the additional investment and still leave anything like profit. Molded boxes from stock designs are the natural answer to these requirements and there are many molding establishments with a number of such molds in their archives waiting to be used.

It is keen buying judgment to take advantage of these stock designs and there is no reason to believe that because a box has at one time been used to package a product that it is not equally useful in packaging another product. Even though a stock design is chosen to avoid mold costs, there is nothing to prevent the molding from being given its own individuality and made suitable for the exact purpose in mind. It must be remembered that the molds are really the stock items. The containers to be made from these molds are not in any sense ready-made. They can be as different from the original boxes for which the molds were made as the imagination of the manufacturer will allow.

In the first place, plastics permit a wide range of colors and color combinations which are in no way limited by stock molds. If an original box and cover were produced in red or black, there are literally hundreds of color combinations that can be used to make the new boxes appear as different as though actually designed for the current user. It is also possible to make boxes of one color and covers of another. Or the cover can be made of plastics and the box itself of another material. Then, too, there are inlays, either of metal or another color of plastic material, which offer innumerable ways of changing the appearance of a box from that of its predecessor produced from the identical mold.

If a comparatively long run is contemplated, tradenames and trade-marks may be hobbed into the mold to be used for the cover, producing an entirely individual box with identifying name of the product or manufacturer. Inlays, especially, offer an attractive means for product identification and they may be accomplished either by inserting stamped metal inlays in the mold when molding or by hobbing the marks of identification in the original mold and then plating with metal by electro-plating methods. These recessed identification



1

1. A group of stock mold closures available in a wide range of sizes and colors and in several types of molding materials. Photograph courtesy of the Owens-Illinois Glass Co., Closure Division.

XUM

CUSTOM MOLDED PRODUCTS



INJECTION

TENITE

PLASTACELE

LUMARITH

MONSANTO

LUCITE

CRYSTALITE

POLYSTYRENE

COMPRESSION

BAKELITE

DUREZ

PLASKON

BEETLE

MAKALOT

RESINOX

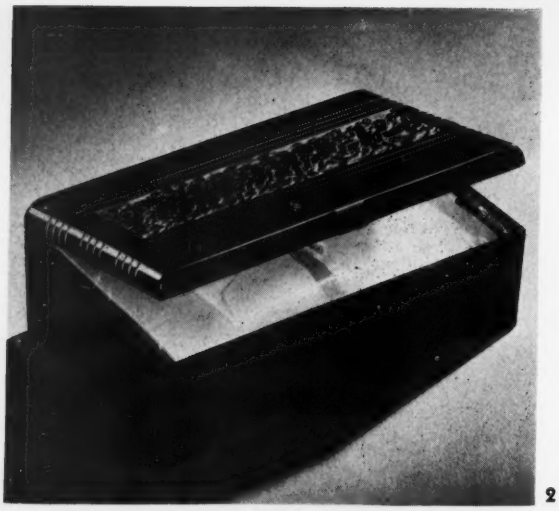
Moldings of distinction for all uses, molded with self contained hydraulic compression presses also complete range of injection presses plus our own modern tool room, all made for moldings of precision and quality.

MOLDING PROBLEMS

Let our engineers work out your design and engineering problems and take advantage of plastics in the most economical manner.

BRIDGEPORT MOULDED PRODUCTS, INC.

BRIDGEPORT BPM CONNECTICUT



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marks may also be wiped in with contrasting color if the expense of inlays would be avoided.

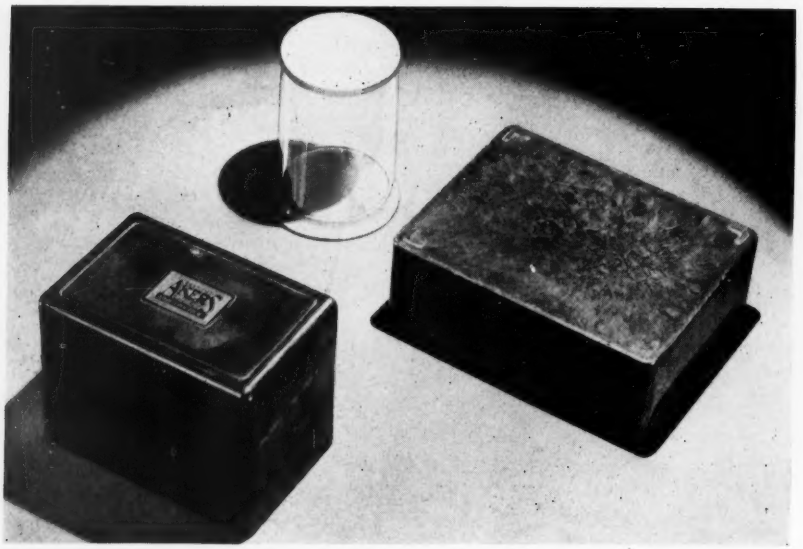
A method has been worked out through which it is possible to print in as many as four colors on plastic containers with little expense. An overall pattern against a plain ground will change a stock container from a drab to a gay affair and give it individuality in keeping with the product it contains. Trade-marks, advertising matter, or plain designs can be imprinted in this way.

The re-use value of plastic containers must not be overlooked nor underestimated. Their smooth lustrous surface and the permanent nature of their construction preclude any chance of their being discarded as soon as the product which came in them is removed. Women, and men too, find many permanent uses for an attractive box and almost all of these plastic boxes, available from stock molds, have been carefully designed with this thought in mind. It is one of the greatest recommendations for the use of plastics in container construction. This one advantage is frequently responsible for the choice of the item at the point of sale. There are amazingly few instances where the extra cost of a plastic box has not justified the additional expense when total volume of sales has been tabulated.

Some molders have spent considerable time and money in perfecting cream jars, powder boxes, rouge boxes, lipstick containers, and allied items for the cosmetic trade. Others have developed clever moldings that serve in the re-use capacity of cigarette boxes or ash trays, and the like, cleverly designed and thoroughly useful both for packaging appropriate items of merchandise and in after use. Then there are other molded items which were originally planned for the retail trade and which, through their familiar appearance in retail stores at a rather substantial price, add obvious value to the merchandise they contain when they appear as a package.

Another advantage to the manufacturer who is in a

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2. A hinged lid box with relief design on top and horizontal stripes with color fill-in. Photo courtesy The Gorham Co. **3.** Bell shaped wedding ring box. Photo courtesy Bakelite Corp. **4.** Three boxes for which molds are available. Note how company names and other insignia may be worked into such molds.

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is just another way of saying—

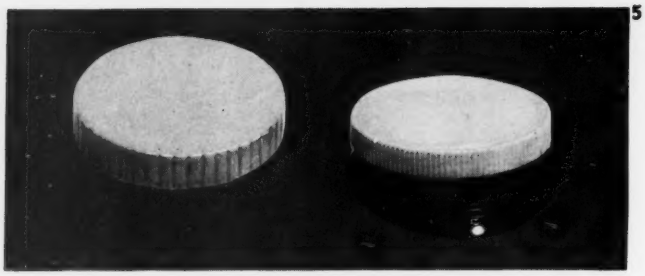
it's Molded by COLT

ARTISTS OF PLASTIC MOLDING

IT'S hard to say just what makes one molded product stand out among all the rest . . . but you can always be sure it *will* . . . if it is *molded by COLT.* Our experience, our equipment, our personnel all contribute to a molding service second to none . . . whether the job is a big one or a small one. Our designing facilities assure smartness, adaptability and eye appeal. The eyes of the molding industry have always been on Colt . . . pioneers of what is new, beautiful and practical in molded products.

Tell us about your molding problems. We will work with you as part of your own organization. We can serve you as we have hundreds of organizations, large and small.

PLASTICS DIVISION
COLT'S PATENT FIRE ARMS MFG. CO.
HARTFORD, CONN.



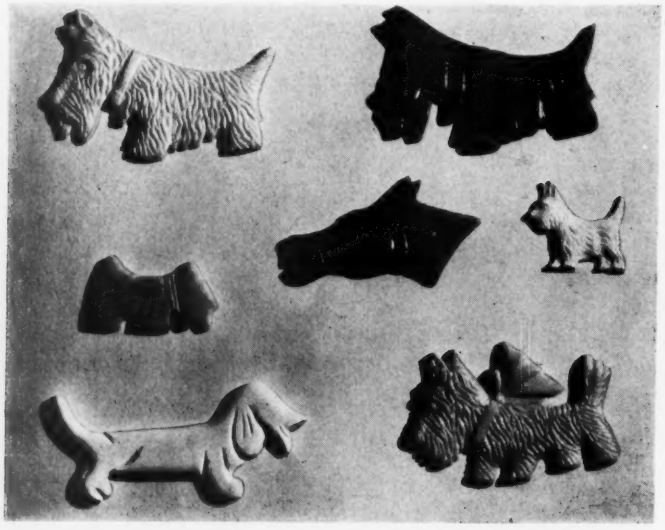
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5. Left: Shallow finished closure, threaded, with fluted edge. Right: Compact with light colored separate top, knurled edge and grooving for decoration. Photo courtesy Grigoleit Co.

position to choose a design from a stock mold is prompt delivery. To make a mold of steel, grinding and tooling it into shape and hobbing in special designs, takes time. Weeks, and often months, are required to finish a mold of this sort. But the manufacturer who finds a mold that is satisfactory for this purpose among stock molds has only to wait for a chance to get the mold onto a press and production begins at once. Not only that, but he has the opportunity of seeing exactly what kind of box or container will be delivered when production begins. Samples are almost always available, and the manufacturer can look them over, choose one that meets his requirements of size and price, and if he chooses to do so, can order a hundred or so for test purposes in obtaining sales reaction before he orders the quantity he will eventually need. Of course, in small quantities of one hundred, these boxes will cost more than in larger quantities but, even so, the expense is often justified by the satisfaction of knowing in advance just what results can be obtained. Sample boxes or containers from a specially designed mold are often very expensive because a single cavity mold must be made and finished and this cost must be absorbed by the manufacturer before any boxes are produced. Changes and corrections are likewise expensive. But when containers are made from stock molds that have already been proved, these annoyances and additional expense are entirely avoided.

Since molds of steel are good for exceedingly long runs of production without appreciable fatigue or wear, there are many of them throughout the country that have served their original purpose and are stored away in molders' shops. Because one of them might have been designed to produce boxes in which safety razors were sold is no reason why it is not equally suitable to hold another product now that the razor is no longer merchandised in that kind of box. Many of these boxes can be fitted with interior compartments at small additional cost and become entirely individual to the merchandise they now contain. Especially is this true if color combinations are changed.

Light and dark colors can be molded from the same mold. Even the cover and bottom of a box may be molded in different colors with the same operation although this requires some ingenuity on the part of the molder and is not usually done. Lighter colors add somewhat to the cost of the box—black, dark brown, green, red and mottled being among the less expensive colors of molding materials. Another thing to be remembered in ordering plastic moldings from stock designs is that this places no handicap upon the buyer in choice of materials. These boxes are not ready-made. They are in no sense old stock. When a manufacturer orders boxes or other items from stock molds he has the privilege of specifying the exact materials he wants used in molding his boxes. This is particularly important in ordering boxes to be used for creams, powders, and other cosmetics, and the advice of your molder in the choice of materials should be taken seriously.



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6. Ornaments for use in set-up box decoration, as bottle medallions, or for other packaging decorative purposes. Photo courtesy of Associated Attleboro Manufacturers Inc.

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DISPLAYS

SECTION NINE

Pages 287 to 320

PAPERBOARD COUNTER DISPLAYS

LITHOGRAPHED AND PRINTED WINDOW DISPLAYS

FLOOR STANDS AND ISLAND DISPLAYS

DECORATED SHEET METAL DISPLAYS

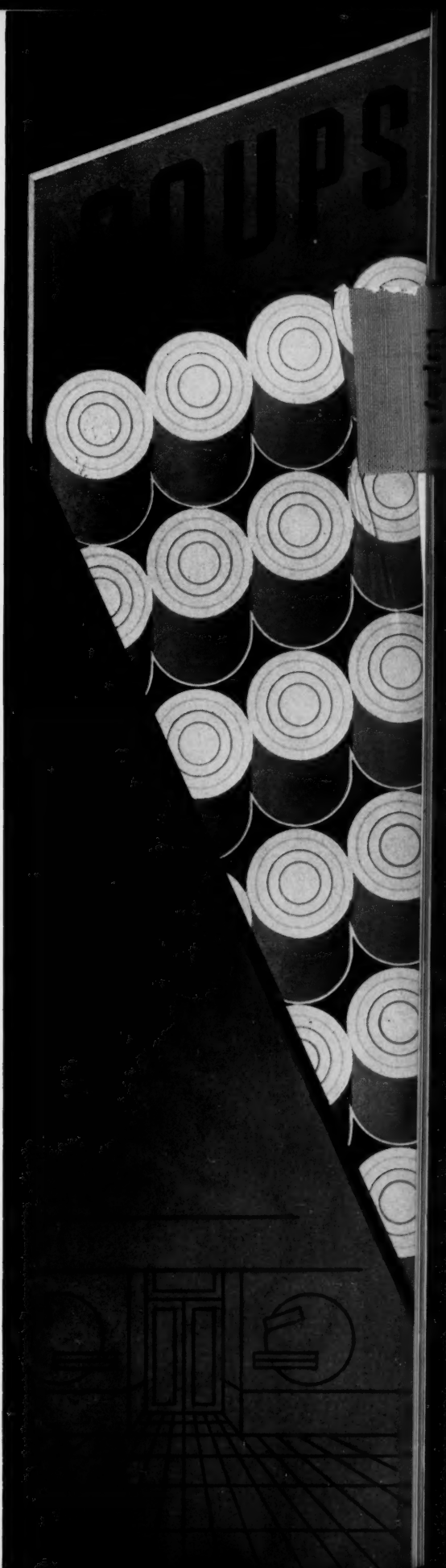
WIRE MERCHANDISE DISPLAYS

PLASTIC DISPLAYS AND FIXTURES

WOODEN DISPLAYS AND CABINETS

MOTION AND LIGHT MECHANISMS

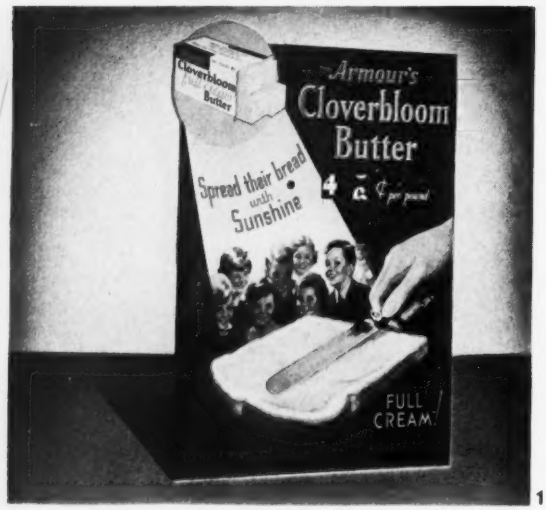
DECALCOMANIA FOR DISPLAY



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Paperboard Counter Displays

by MERLE D. PENNEY*



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1. Counter display card carrying changeable price figures as used to promote butter sales. Courtesy Forbes Lithograph Mfg. Co. **2.** Product display for counter or back bar use, incorporating an actual bottle into a niched high-relief background. Courtesy Chaspec Mfg. Co. **3.** Shipping container so designed as to convert into counter display upon opening. Note folding side flaps. Courtesy The Hinde & Dauch Paper Co. **4.** Counter display designed to minimize dealer stock needs. Only top layers can carry actual merchandise, balance of merchandise represented on surface of display itself. Courtesy Forbes Lithograph Mfg. Co.

Chain stores proved some years ago that when goods were moved from shelf to counter, sales pyramided—in some cases as much as eight times. This was the result of simply placing the product packages out on the counter where they could be seen and picked up for examination by the prospective purchasers.

The next logical step in aggressive point-of-purchase merchandising was the introduction of a counter display on the counter with the product. In other words, placing an auxiliary salesman in the store to cooperate with the retailer and his clerks, who, though their intentions be of the best, cannot push and promote every one of the thousands of items that make up the stock of the average retail distributing outlet.

This auxiliary salesman occupies a prominent position on the dealer's counter and delivers the manufacturer's own carefully prepared selling message to the audience in the store.

Functions of the Counter Display

Just as in the case of window displays, the counter display has two primary jobs to do:

1. Sell the Dealer

   Counter space in retail stores is extremely valuable. The items that are fighting for this valuable "down front" position are legion. The counter display must appeal to the retailer as a vital sales-building unit that deserves a part of his counter space—a unit that will help him build profits.

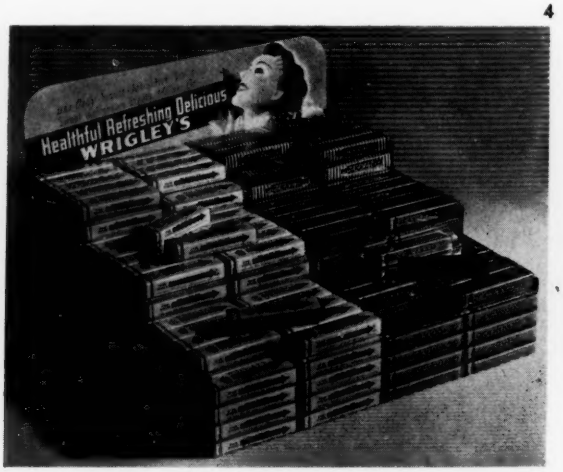
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* Sales Promotion Manager, The Forbes Lithograph Co.

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2. Sell the Shopper

Counter displays, correctly conceived, developed, and executed, will perform a coordinated series of selling acts, as follows:

(a) Suggest pick-up of product; (b) invite inspection of product; (c) extol product virtues; (d) dramatize, by picture and copy, product superiority; (e) suggest and illustrate product uses; (f) urge purchase of product.

In addition to these two primary functions, there are other specific jobs the counter display can perform. A few of these are:

3. Tie in with Advertising in Other Media

To the shoppers' roving eyes the counter display instantly identifies the product that was mentioned "on the air," or described in magazine or newspaper, or illustrated on posters, or window displays.

4. Remind of Forgotten Needs

Many a sale (impulse sale) has been incited by a counter display when the shopper, after ordering everything on the shopping list, takes a quick glance to right and left to make sure she hasn't forgotten some item that she needs. The small display basket is an ideal example of developing impulse sales by going after the change that is due a shopper after paying for planned purchases.

5. Describe Special Premium Offer

Much use has been made lately of counter displays in describing a special premium offer that is part of a campaign. In many cases, an actual premium is incorporated in the display.

Kinds of Counter Displays

A few general classifications will encompass the wide variety of counter displays seen today in retail stores of all kinds. There are so many structural variations possible for displays of each type that no attempt is made in this article to illustrate all of these.

Other illustrations of printed and lithographed counter displays will be found under the heading Folding Cartons and Display Containers in the Paper Box section. Counter displays of metal, plastics and wood are illustrated in the articles on these subjects on the pages which follow in this section.

1. Counter-Display Card

The ordinary square-cut or die-cut card, lithographed or printed, that stands on the counter—either by itself, or in conjunction with a pile of the product packages.

2. Product-Selling Card

The lithographed or printed counter card that has a quantity of the product packages attached to the



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5. Three-piece counter unit which assembles to provide graphic and eye-catching simulation of pouring fluid. Courtesy Brett Lithographing Co. **6.** Three units of an integrated display program. Above, a window poster. At left, counter display basket. At right, counter display price card supported by two cans of the product. Courtesy Einson-Freeman Co., Inc.

face of the card in any one of a number of ways—with rubber bands, with metal clips, held by die-cut tabs, fitted into die-cut openings, etc. This type of counter card reaches the dealer filled with the merchandise and is ready to be placed on the counter and go to work immediately, selling.

3. Product Displays

(a) The type of display piece that is so designed and constructed that attention is focussed immediately upon packages that are an integral part of the display itself.

(b) Similar to "(a)," and so constructed that an illusion is created of product pouring forth from the package, and other apparent action, without the expense of mechanical movement.

(c) Similar to "(a)," but at the same time holding and proffering some descriptive booklets or folders, recipes, etc.

(d) The same type of display, but displaying and describing a combination consumer deal of two or three related items.



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7. Display-demonstrator inviting consumer attention by movable windows. Courtesy Einson-Freeman Co., Inc. **8.** Lighted counter display-demonstrator for optical store use. Courtesy Livermore & Knight. **9.** Display carton which carries merchandise in shipment and presents it to the consumer tilted for easy examination. Courtesy Robert Gair Co., Inc.

4. Jumble Display Basket

This type of counter display has grown so in popularity that it falls into a separate classification of its own. In the display basket the product is presented in a jumble display that invites inspection and self-service, particularly to those people who instinctively hesitate to disarrange an orderly array of product packages. The display basket usually is shipped to the retailer folded flat, and in the shipping container that carries the product. The retailer then quickly places the basket on the counter and tosses in the product, immediately creating an inviting jumble of product packages backed up by an attractive and convincing sales story presented on the panels of the basket.

5. Display Container

A lithographed or printed container that usually reaches the retailer filled with the product. The retailer raises the cover to display position and sets container on the counter as a display.

6. Metal Rack

This is a permanent form of counter display that can be used where it is not essential that there be those important and more or less frequent changes of approach, illustration, and copy. (See articles on wire displays and sheet metal displays.)

7. Novelty Counter Display

Lithographed or printed counter displays so designed and constructed that some device is made a part of the display piece that gives the shoppers something to do—something to twist or move—that will center their attention on that display while awaiting their turn at the counter—during which time, of course, the selling message and illustration on the display have a grand opportunity to register and to click.



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1. Three-piece window display designed to focus attention on the reproduction of the package and the product name. Side panels reusable as counter units. Courtesy Niagara Lithograph Co. **2.** The female model in this framed display originally appeared on a floor stand. Thus the display within the display capitalizes upon consumer recognition value. Courtesy McCandlish Lithograph Corp.

Lithographed and Printed Window Displays

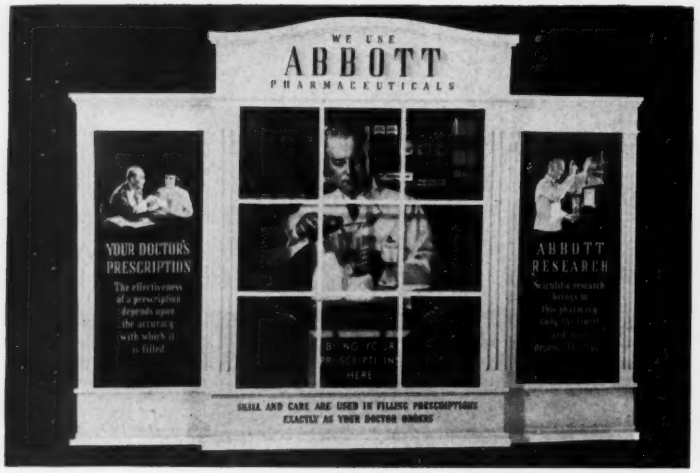
by MERLE D. PENNEY*

One main objective in window display advertising is, of course, the development of a window display that instantly will become a positive traffic-signal controlling the flow of consumer traffic passing in front of each retail store. Window display, by its forcefulness, will operate as a red light and make the traffic STOP, and then, by its convincing merchandising idea, copy and illustration, change to a green "go ahead," and induce that flow of consumer traffic to change its direction and enter the store and SHOP.

In order that we may develop window displays that will approach maximum effectiveness, it becomes essential that all factors incident to the planning, development, and distribution of these displays be studied and weighed. But, first, let us consider some of the *reasons why* for window display advertising. Window display advertising enjoys advantages that are peculiar to point-of-purchase advertising media.

1. MINIMUM OF WASTE CIRCULATION
   Displays in a store window are directed to the people who travel on the sidewalk in front of that store and to those who enter the store, the overwhelming majority of whom live in that neighborhood and are immediate potential customers of that store. This is an excellent positive type of circulation where an urge to buy instigated by the display can be satisfied on the spot.
2. SELECTIVITY OF COVERAGE
   After considering the type of circulation afforded by window display, it is but a short step to a full comprehension of the ideal manner in which window displays provide the means for a very selective type of coverage. Displays can be directed to specific areas:
   (a) To stimulate sales in a lagging sales area;
   (b) To promote a specific product in certain class areas;
   (c) To make, or supplement, a new product sales test, and for any other special purpose, as well as provide a more general sectional or national coverage.
3. WINNING DEALER GOOD WILL
   It would be impossible for dealers, individually or in groups, to provide themselves with the wide variety of high-grade lithographed window display material that is so universally employed in present-day merchandising. The unit cost would be prohibitive. The manufacturer, however, by buying in sizable quantities, is able to employ the services of skilled advertising men and display producers of outstanding ability; men and organizations whose experience and contact with modern merchandising

*Sales Manager, The Forbes Lithograph Co.





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fit them to create and produce potent and forceful displays that possess real selling punch.

4. Cumulative Effect
This matter of cumulative effect of repeated showings is a vital factor, present in every window display campaign, that is apt to be forgotten or overlooked. With the same window display present in store windows scattered throughout a town or city, consumers and shoppers are exposed to these many displays as they circulate about, on their way to and from work and shopping, and these many impressions often combine to instill a desire and incite definite purchasing action.

Functions of Window Displays

There are many ways in which a window display can, and must, serve both the manufacturer and the retailer. These align themselves definitely under two fundamental functions:

1. The display must sell the storekeeper or dealer on the idea of making proper use of the display. To do this the display should:
(a) Be sufficiently attractive, outstanding and forceful to deserve and win a showing in his valuable window space in competition with other displays promoting other products.
(b) Be of such a nature that it will stimulate the interest of the retailer and his clerks in that product during the time the display appears, fostering their goodwill and co-operation.
(c) Win a place inside the store—after it has been taken from the window, on a top shelf or back bar, to continue as an influence on buying action.
(d) Provide a co-operative means whereby retailers can sell more of their complete line. When good displays of this type have been developed, the final results have been most gratifying to manufacturer and retailer alike.
2. The display must prove its worth by influencing shoppers to purchase the product. In order to accomplish this, the display should:
(a) Command the attention of the passing shopper by any one of a number of means; size, comprehensiveness, attractiveness, domination, unusual design, motion, startling display effect, etc.
(b) Develop points of interest that will hold the attention long enough to incite a favorable product interest, and exert an influence on buying action.
(c) Act as a stop-gap, by reminding of the product during the interval that elapses between the time the advertising message is seen in other media and the time the purchaser stands in the store asking for the product—a period of time during which many factors may influence a change of mind.
(d) Impress the observers with the quality and desirability of the product.
(e) Remind of forgotten needs, or intended and desirable purchases.
(f) Tie in with advertising in other media, supplementing the other advertising by emphasizing the high spots and illustrating the message in an attractive and colorful manner.
(g) Introduce new products quickly and economically, when other media do not seem to provide the same selective type of promotion that is inherent in window display advertising.

Developing a Window Display

In the creation and development of window displays, the display specifications will be governed by many of the factors considered in planning for them, as well as the following:

1. Appeal: The basic sales appeal must be decided upon—in other words, the line of attack.
2. Idea: Determination of the display idea that will best fit the situation, and the most effective way of presenting that idea to the buying public—by illustration and by copy.
3. Art: The art treatment should be in keeping with the nature of the product, the class of trade, the type of retail outlets, and the trend of the times. The subject must be unusual and outstanding in its particular nature—beautiful, humorous, startling, educational, seasonal, etc.

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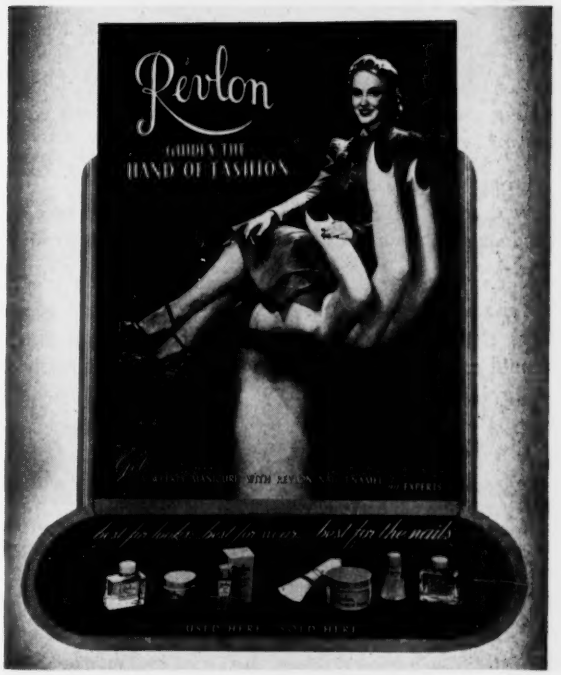
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4. Copy: The copy must be fast reading as it is being directed to people who, on an average, take only seven steps in passing a store window.

5. Construction: The physical or mechanical construction of the display, while it should be unusual, unique, clever or striking, must be practical above all things. Storekeepers no longer have the time, nor the patience, to play at pantomime acting or mechanical engineering.

6. Extra Features: Attention-getting devices can be worked into the display—light, mirror effects, illusions, motion, etc.—but it must be kept in mind that these extras increase the unit cost of the display, necessitating greater total expense or smaller coverage. Certain conditions will warrant such devices, others will not. Simplicity of design, or distinctive treatment of effect, when carried out by real creative artists, will many times prove most effective.

7. Economy: Economy in display production, with-



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3. Typical ethical display favored by the pharmaceutical trade. Courtesy Ketterlinus Lithograph Mfg. Co. **4.** Direct color photography and action set-up give new interest to much displayed merchandise. Courtesy Kindred, MacLean & Co., Inc. **5.** A group of die-cut units of varying sizes combine to achieve window dominating effectiveness. Courtesy The U. S. Printing & Lithograph Co. **6.** Dramatic use of photography makes this simple display extremely effective. Courtesy Einson-Freeman Co., Inc. **7.** Four effective posters supplement the central portion of this display to create a window unit designed to appeal to all age groups. Units may be utilized separately within the store. Courtesy Forbes Lithograph Mfg. Co.

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out sacrifice of quality, is important. Proper consideration of display sizes and shapes, as they relate to economical sheet layout and other production operations, is of the utmost importance.

Distribution of Window Display Material

It is not enough to pass through the throes of creating and developing a window display of just the type and adaptability that will successfully perform a specific merchandising job, and then broadcast these displays indiscriminately throughout the trade in the smug, self-satisfied conviction that *your* display—your baby, as it were—is the one display of importance in the lives of your retail distributors.

Retailers are getting hundreds of unsolicited displays each year, so poorly conceived and badly executed that they get but a cursory glance from the retailer and are consigned unused to the cellar or the rubbish barrel. However, the presence of these poor displays should but emphasize the importance of making *your* display a selling tool the retailer will welcome and use to your mutual satisfaction and profit.

Properly promoted and intelligently distributed window displays will appeal to the retailer as a piece of product advertising that it will pay him profits to use.

The type of product, the extent of territorial coverage, the size and comprehensiveness of the displays, the quantity, the retail problems in that industry—all these should enter into a consideration of the proper method of display distribution.

1. Methods of Distribution

(a) Shipping the displays in the same container with the goods.

(b) Installation by professional display service organizations.

(c) A large corps of retail salesmen is a "natural" for proper and effective display distribution. The salesman not only can see personally that his display is used, and used properly; he can, if desired, watch the results and check with the retailer.

(d) Another method of window display distribution is thoughtfully planned trade-paper advertising to the retailers, showing what display material is available, its nature, what it is designed to accomplish, and how to get it.

(e) Another way, of course, is to contact the retailers by direct mail, furnishing return postcards on which the retailers can request the display material. Requested display material gets put up—there's no question about that.

2. Set-Up Instructions

Informing the retailer just how to set up the display, and what to include in the window with the display, is an important phase of distribution.

(a) An instruction sheet can be tipped on the back of the display, carrying an illustration of an interesting window arrangement with the window display in place, and an actual listing of suggested products to include with the display.

(b) Pasting one of the instruction sheets on the outside of the window display container indicates to the retailer just what is in the container and the desirability of making a place for that display.

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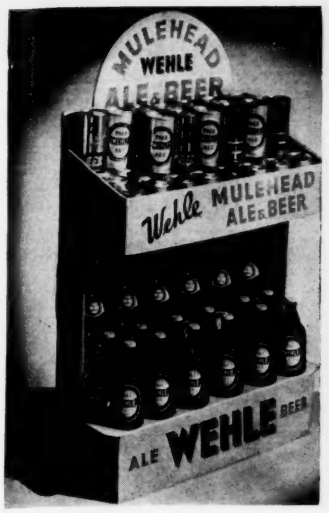


8. Realistically designed to put over an advertising selling point, this unit gains principal effectiveness by its use of direct color photography and three-dimensional effects. Photo courtesy of the Einson-Freeman Co., Inc.

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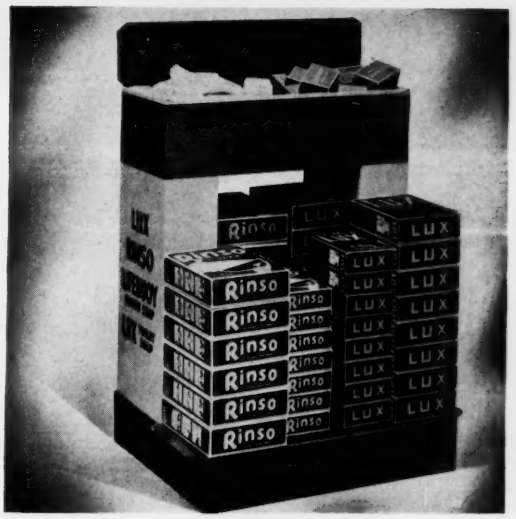
9. A window set-up, consisting of three pieces, effective as a group or separately. The buttercup on the central piece is made of fabric and serves to provide a central focus of interest. Courtesy Forbes Lithograph Mfg. Co.



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1. Two-shelf floor stand. Courtesy Robert Gair Co., Inc. **2.** Low level floor stand backed by life-sized figure. Courtesy Forbes Lithograph Mfg. Co. **3.** Shelf and basket combination. Courtesy Hinde & Dauch Paper Co.

Floor Stands and Island Displays

by HECTOR P. HUGHES*

The floor stand or island display has become so popular and has proven its worth so many times that it is now accepted as a vital part of almost every sales campaign. The counter was the first spot to strike the merchant as a place to display his goods. The success of counter displays became so great that in late years practically the entire counter has been given up to them. Competition has become so keen for this space that now only the most effective are used at all.

It was this congestion that suggested to the logical mind the use of island displays on the floor. Not only did this open up new possibilities in regard to space, but it also widened the scope enormously of the type of goods that could be displayed. Hitherto only small units of the less bulky goods were adaptable, but now whole cases of some of the heaviest goods are placed in island displays in mass formation to catch the customer's eye.

Island displays may be made from corrugated fibre board or solid fibre board. Those made from solid fibre are usually lined with a multiple colored lithographed sheet. It is only occasionally that the corrugated displays are made in this way. Lithographed displays on the whole are comparatively expensive, and for this reason they are usually confined to the higher priced line of goods sold in drug stores.

Corrugated displays are printed in two or three colors with rubber plates. With the development of glossy inks these now compare very favorably in appearance with the lithographed display. Because of the use of rubber plates, the direct printing on the combined board, and the lower cost of materials used, these displays are comparatively low in cost.

Floor displays have progressed through a logical series of steps into the prominent field they hold today. The earliest type of display was made by printing on the shipping case a dotted line extending across the front and diagonally up the two sides. The merchant was instructed to cut along this line and bend the front half of the box back on top of the other half. This made a couple of steps on which the goods could be displayed.

The trend then was to make the display entirely separate from the case. As a result the floor stand grew more and more elaborate and complicated, until it took almost an engineer to set one up. This was all right for the distributor who could send his own men out into the field to set them up, but the average manufacturer or distributor is not in a position to do this.

There are two trends that as a result of the foregoing are noticeable today. First is the trend toward simplicity of construction—a floor stand to be really successful today must be simple. There should be a minimum number of parts to handle. Although complete set-up instructions are given with every display, it

* Robert Gair Co., Inc.



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4. Lithographed action display with basket to hold merchandise. Courtesy Zipprodt, Inc. **5.** Triangular floor stand for drug items. Courtesy Einson-Freeman Co., Inc. **6.** Square stand with table level basket. Photograph courtesy of the Hinde & Dauch Paper Co.

should be apparent how to put it together without the instructions.

What used to make this display so complicated was the elaborate interior supports that were worked out to support the shelves or bins. The design engineer has eliminated these interiors by a few simple and novel changes in the shape of the outer walls. The lower portion of the walls are cut and creased in such a manner that they now directly support the contents of the display.

This trend toward simplicity has been somewhat offset in the last year with the appearance of the super markets.

The super market demands super displays. As a result displays are beginning to make their appearance in a size never thought of before. These are usually built in such a manner that they can be approached from all sides. Usually they stand in the center of a store and are built up in the shape of a pyramid. These displays may be a single unit or, for greater flexibility, they may be a number of smaller displays grouped together to make one large mass display.

The latter method is the most satisfactory as it makes the same display available to both large and small stores. In the large stores and super markets it also makes them more adaptable for individual needs. For instance, where the store has long aisles, you will find 20 or 30 units placed end to end running the full length of the store. Another store may have little aisle space but a big center area. In that case, they will bunch the displays in a more or less rectangular shape and fill them up to overflowing so that it looks like one mass display.

The second trend worth noting today is the reconsideration of the old shipping case. Many manufacturers are asking today, "What about my shipping case—haven't I there a foundation for a floor stand? What can I do to dress up the old case and make it do some real advertising for me?"

In some instances it has merely involved more elaborate printing to turn the case into a travelling billboard. A further step along this line has been the introduction of various colored boards to replace the usual drab kraft color. A still later innovation is the use of overall printing. This is done with a special press on the liner before it is combined into a corrugated sheet. It serves to identify a manufacturer's brand by making it stand out from the common run of packages that surround it.

In developing or re-developing the old shipping case there has also been considerable thought given to its construction. The problem has been to find a way of easily converting the case after its arrival at the store into a shallow bin or platform on which the contents could be attractively displayed. One of the most popular ways of doing this today involves merely the addition of an extra score through the middle of the top flaps. The case may be sealed and shipped in the regular manner. When it is opened the top layer of goods is removed, and the flaps are then bent inside. The end of the flap above the extra score is bent to form a right angle and they are held in this position by a special slotted pad that has been shipped in the top of the case for that purpose.

Another well known combination calls for full overlapping top flaps. The platform is formed by bending in the front flap and the side flaps are joined to the back flap and are diagonally cut and scored so as to form the back and sloping side walls to keep the goods from falling off.

XUM

A third successful combination is a two-piece display case consisting of an outer tube and an inner box. The tube is cut and creased so that the sides can be bent in to form an easel. When the store clerk receives this box, he simply slides the case out and stands it on the tube, and he has a complete display ready to do a selling job.

Most of these efforts have been confined, until recently, to the cases that are big enough to stand on the floor and make a fair sized display. When the same methods have been applied to some of the smaller cases, they have not been so effective. The small case is lost on the floor and the corrugated of which it is made looks too bulky and ungainly if the dealer tries to place it on the counter near to one of its smart appearing folding box cousins. This is particularly true if the case has been soiled, as it usually is, in transit.

In the last few months even these objections have, to a large measure, been overcome. Some very simple, yet novel ideas, have been worked out. It is now possible to print all of the elaborate copy which is to be shown when the case is set up as a display on the inside of the top flaps. In transit this copy is now protected from all possible damage. Instructions on the outside of the case tell the dealer how he can bend the front flap forward and the back flap upward to reveal the sales message. The side flaps bend down and under the box to lock together and form an easel that tilts the box forward to better display the contents. Some of these cases have proven so attractive and practical that a place of prominence has been made for them back on the counter.

Lithographed Floor Stands

Lithographed floor stands are produced in all sorts of designs, usually in a number of bright colors, the paper sheets being mounted on heavy solid fibre, which can be die-cut into any desired shape. The exponents of the lithographed floor display stand contend that their sales medium is greatly superior to other forms, due to the fact that through presentation of the sales message using illustrations and in full color they secure larger, more immediate, and more convincing consumer attention, as well as winning over store owners who have demonstrated their willingness to give them preference, because of their high character, colorful interest, and greater effectiveness in making sales.

While there is a great deal to be said in favor of this line of reasoning, it must also be borne in mind that lithographed floor displays are necessarily more expensive. If funds are available and distribution is effected through the larger stores, where competition for display space is almost as much a battle as between products, it would seem obvious that the most effective display stand possible to secure would prove the most economical in the long run. However, when distribution is largely confined to the smaller stores, the convertible shipping container and display stand will permit coverage of a wider number of stores, with due allowances for bringing out something new and interesting by the time the novelty has worn off of the previously used stand. It would seem, therefore, that each type has its advantages and applications, and selections will best be determined on the basis of individual facts and conditions.

Regardless of the materials used or the method of reproducing the copy message, it is of primary importance to design floor stands so that they will *sell merchandise.* They hold a unique position in retail-store merchandising for they are placed out in front of the counter, mixing right with shoppers, prior, during, and following purchase of the "demand merchandise" which brought them into that store to shop. This preferred display position places the product within easy reach, immediately suggests picking up one for detailed examination, and is an opportunity few shoppers can resist. Thus by the combined appeal of the display stand and the product a definite sales stimulus is provided that moves merchandise quickly and profitably off the stand, out of the store, and into the consumer's home.

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7. Corrugated floor stand designed to hold heavy paints. Courtesy The Ottawa River Paper Co. **8.** Life-size floor display figure in full color. Courtesy Forbes Lithograph Mfg. Co. **9.** Floor stand display with wagon as receptacle for merchandise. Courtesy Einson-Freeman Co., Inc.

Decorated Sheet Metal Displays

by S. R. WIRTH *

A decade or two ago, the standard practice followed by most manufacturers to get their goods in the hands of dealers was by regular or "high pressure" methods. They would then be content to sit back and rely on the initiative of the retailer and his clerks to sell the goods. Having completed the physical distribution of his goods, the manufacturer felt that he had adequately performed his part of the complete selling job. Manufacturing schedules were based on "law of average" sales and it was conceded as inevitable that years of patient sales and advertising effort were required to secure a reasonably large volume of sales and national recognition.

In recent years, merchandising problems have become infinitely more complex. Today, there are thousands of items competing in the same field where formerly there were only a few. It is said that the average retail druggist carries in stock anywhere from ten to twenty thousand different items and almost as many are carried by other types of retail outlets. Increasing discrimination among consumers has forced dealers to increase the varieties of products carried in stock to the point where, obviously, they cannot all receive equal promotion and prominence of display.

Such competitive conditions have altered the viewpoint of the manufacturer. Getting his goods into the store is only the beginning, for success and profits today are measured in terms of getting those goods into the hands of the ultimate consumers. Selling the consumer is not alone the responsibility of the dealer; it is one which must be shared in by the manufacturer as well. With thousands of items competing for the dealer's attention, with varying margins of profit to switch his

* Vice President, Advertising Metal Display Co.

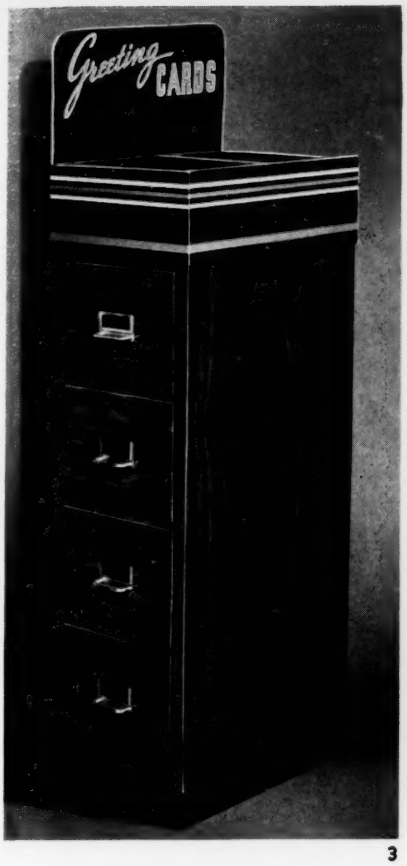
1. Battery display cabinet with storage space in drawer and in rear. Front cover formed to look like actual batteries.
2. Revolving stand provides for immediate selection of any desired size of assorted merchandise.

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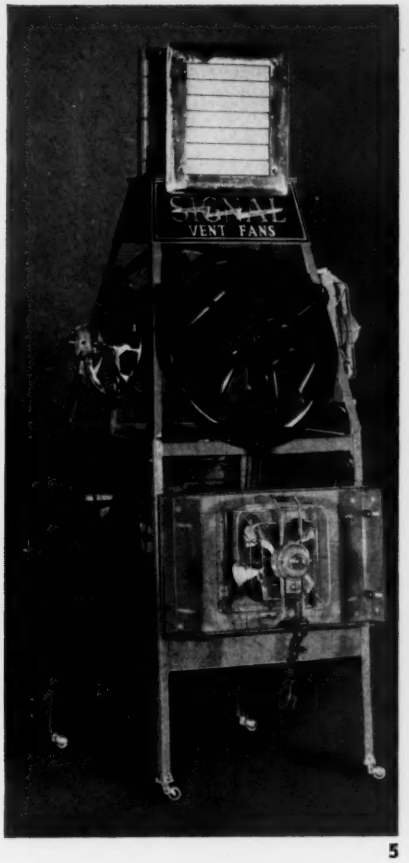




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3. Combination file cabinet and display stand. The top is removable. **4.** Metal frame provides three shelves and display panel on limited floor space. **5.** This unit solves the problem of displaying bulky merchandise requiring demonstration. Note casters on stand.

loyalty, the self-interests of the manufacturer dictate that he shall lend a definite helping hand in the retail store. Only by so doing can he make certain that his products receive the attention which they must be given to be profitable.

It is at this point, and to perform this job of information and persuasion, that the store display serves so usefully and effectively. Properly designed, the display brings the product within the range of the consumer's vision, explains and demonstrates what it will do and why it deserves consideration. By copy and illustration it arouses interest and stimulates desire, making buying action almost automatic, with little or nothing required of busy dealers and clerks.

Of the many types of materials used in the manufacture of merchandising displays and similar products, sheet metal stock is one of the most popular. Cheapness, strength combined with little weight, pleasing appearance, durability and ease of fabrication are some of its qualities, while one of the most important is the ease and economy in coating and decorating by lithography. Displays made from tin plate or similar sheet metal stock are economical to build, need little bracing as they have sufficient strength and rigidity unto themselves and in large quantities are not only inexpensive but may be used over long periods.

While those basic essentials for a good store display—correctness of size, focusing of attention on the product, self-service, storage features and simplicity of design—hold true, regardless of what material is used in the construction of the display, those made of metal offer these features:

1. Many types of displays are designed with the complete expectancy that they will be used for only a brief period and then discarded. Metal displays on the other hand offer strength, rigidity and a permanency of finish, unaffected by time, which encourages their use over much longer periods.

2. Inasmuch as the dealer uses metal store and display fixtures as part of his permanent equipment, he recognizes their superior qualities. In the displays that are sent to him by manufacturers, he feels that those made of metal fit in with the other fixtures he has, make for an improved appearance in his store interior and may be used with entire freedom from worry as to tipping over and damaging goods.

3. Metal combined with other materials offers an unlimited range of possibilities for new and different

display ideas. Many times it is advisable to provide a storage cabinet with the display and this can be built better of metal.

4. Combining the beautiful reproductions, obtainable by modern lithography, with the use of newly created or currently popular materials, such as chrome and other plate finishes, makes it possible to obtain results commensurate with the most attractive modern surroundings.

In considering the construction of metal displays, it is well to understand that there are basic differences between this type of manufacture and that of other metal products. It is by far a more specialized and less mechanical business. Each particular display is a distinct production job requiring the working out of special designs, and the planning of production operations.

Combining other popular materials, such as chrome, gold bond and plated finishes with lithographed or silk screen processed reproductions often enhances the attractiveness of a metal display piece, making it acceptable under the most critical circumstances. Other materials utilized extensively are glass, mirrors, wood, rubber, castings, plastics, fabrics and electrical equipment.

The various types of displays may range from step-up or pyramided to round or rectangular and may have incorporated in them self-serving, dispensing or dealer-help features. The latter may consist of gum tape holders, string cutters, coin and stamp trays or even compartments to hold other merchandise. Displays may be made rotating or stationary. A popular style of display is the overhead arch which not only attracts attention but suggests a department in itself. In planning a display the relative flimsiness of light gauge metal may be overcome by such means as rolling or beading the edges, embossing or depressing surfaces or rounding the corners.

By far the largest number of metal displays produced have lithographed copy. There are several processes, however, by which metal may be decorated.

Press Printing and Gum Printing: These processes are similar and are done on the flat sheet after the base coating of the metal has been applied. The printing is done directly to the base coating. Both processes of decorating are used extensively in the manufacture of metal signs where fineness of detail is not so essential.

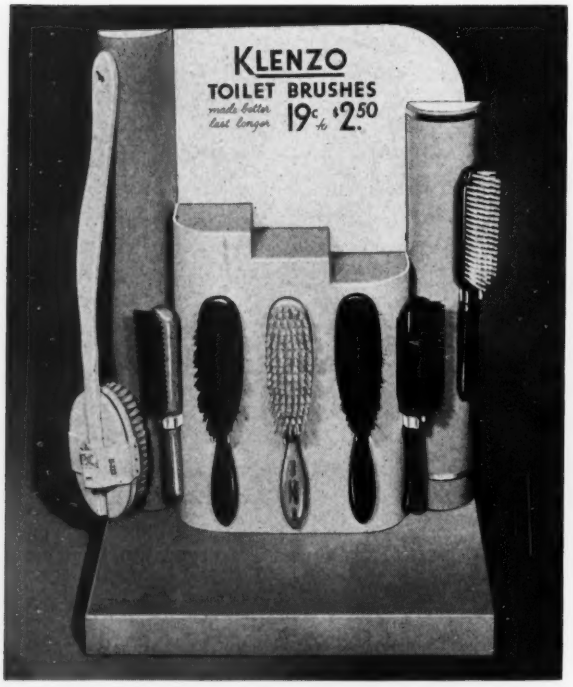
Silk Screen Stencil: The base coating is applied in the same manner as in the preceding processes, while the design is applied by forcing stencil paste through a silk screen. Through the use of photo-process methods of producing silk screens, half-tone reproductions can be made of almost any subject.

Where size limitations make lithography impossible, or small quantities (up to a thousand or so) of displays or signs are required, the silk screen method of printing is both practical and economical.

Lithographing: This is produced by very much the same method as is used in gum printing. The difference lies in the method employed in transferring the paints or inks in making the lettering or designs. Lithographing is also done on the flat, full-size sheet and ranges from the simplest effects in one-color coatings to the reproduction of the most intricate designs.

6. Counter unit with wire clips to hold brushes. **7.** Bent glass front displays spark plugs to their advantage. Storage space in rear. Photos courtesy Advertising Metal Display Co.

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XUM

Wire Merchandise Displays

by C. D. DAVENPORT*

Nothing, with the possible exception of glass, offers as much opportunity for product visibility as wire. Viewed from front, side, or even the back the product can easily be seen. This means concentration of attention on the product rather than the display.

The last year has seen the development of many combination displays using wire with cardboard, wire and sheet metal, wire and wood, wire and acetate, wire and plastics, and wire and Masonite. In some instances wire forms have been made to be used in conjunction with displays already on hand or in use. These forms are generally called display accessories, and have frequently saved the manufacturer from having to buy an entirely new display.

One type of display that has been very popular, especially with syndicate store managers, is known as the "above the counter" model. It is a pedestal type requiring only a few inches of counter space to support a display of one or two square feet. The base of these displays is made flat so that goods can be arranged over it, giving the store manager the maximum use of his counter space. These "above the counter" displays have been made in stationary and revolving types with equal satisfaction. One reason wire has been so popular for the "above the counter" displays is that the sales girl can see when a customer is at the counter without walking past the display. The open construction gives the girl full view of all parts of the counter, which is not always possible when solid displays are used.

One of the newest developments is the use of acetate with wire. The acetate sheets can be cut in any shape and provide a transparent covering that protects products from dust and theft. An advertising message can be printed on the transparent acetate and this gives the appearance of having the words suspended in mid-air.

Wire adapts itself well to all sorts of shapes. As a result trade characters used in publication advertising spring to life in wire form as part of many displays. They may be entirely of wire, wire and carved wood, or wire and sheet metal. In some instances a trade character has been made life size of some light material such as cardboard and a wire backing provided to support it so garments could be hung on the figure.

Wire displays can be made in practically any size from a small dispenser for packages of razor blades to large bakery racks that hold several hundred loaves of bread. Racks have been built to carry loads of 1000 to 1200 lbs. For practical purposes it is best to limit weight of not more than 700 or 800 lbs., as the cost of reinforcing is usually rather high.

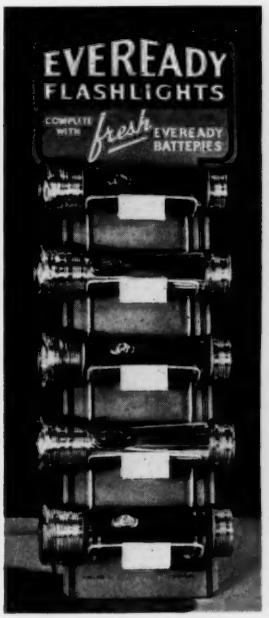
The manner of construction often makes it easier to prepare a folding or collapsible rack of wire than of other materials. This is a decided advantage in ship-

* Union Steel Products Co.

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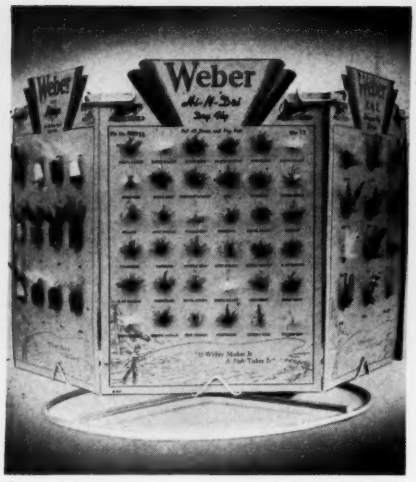


3



1. Rigid, non-folding type of wire floor display stand. **2.** Wire and sheet metal combine to form an effective display rack for flashlights. Price ticket holders incorporated as integral part of unit. **3.** A metal dispensing tube is held on a wire stand. Photos courtesy Union Steel Products Co.







4 5 6

4. Wire and sheet metal for a floor merchandising unit, offering full visibility of the products. Courtesy Union Steel Products Co. **5.** A revolving counter display made of wire and cardboard. Courtesy Union Steel Products Co. **6.** Sheet metal is used for the table and wire for the super-structure. Courtesy The Washburn Co.

ping. Classifications for racks when figuring freight costs are: folded flat, third class; folded other than flat, first class; set up, first and one-half. Wire displays not only are free from bulkiness but they generally are light in weight.

Many companies find it advantageous to use a display that can be packed with the product. For example, a seed company will fill the shelves of the seed rack and insert the display and seeds in a carton for mailing. Wire racks can easily be designed for this purpose.

The ability to form wire shapes of practically any design makes it possible to display the product in full view. Wire displays can be made to show gloves, hosiery, sweaters, and other such items, the display following the lines of the product. When such a display is made and the trade name included in wire-formed letters, the manufacturer is assured that the display will be used for his products and no others.

Another feature of wire displays is that they are now designed so they are easy to put together. Seldom are bolts or screws used. Clips, hinges, and other devices are the accepted methods. Great improvements have been made along this line, no tools or mechanical knowledge being necessary to put them together easily.

The most economical finish is either paint or enamel. Plated finishes are more durable, scuff-proof, scratch-proof, and fade-proof, but lack the appeal and warmth of color. Tin or galvanized finishes are very lasting, but because they "freeze" wires together and fill over loops or openings in the wire, they are not recommended for folding or collapsible racks.

Least expensive of the plated finishes are bright copper and bright zinc. Bright nickel, Udylite, and chromium are also available and the cost is about in the order named with bright nickel being the lowest in price.

Chromium is a very popular finish and methods have been worked out whereby a very good imitation of polished chrome can be obtained without the costly polishing process. However, to get the fullest value from chromium and to obtain a mirror-like finish, the display should be polished. This adds considerable to the cost but is often worth it.

Wire displays may be finished with aluminum bronze paint or colored lacquer. Ordinary aluminum paint has the disadvantage that it rubs off and does not stand up well under use. Some display manufacturers have reached a high degree of perfection in the development and use of aluminum bronze paints.

There is no limit to the colors obtainable in lacquer or enamel finishes, although display manufacturers usually standardize on from ten to fifteen colors. Displays finished in these stock colors are less expensive than if some special color is required.

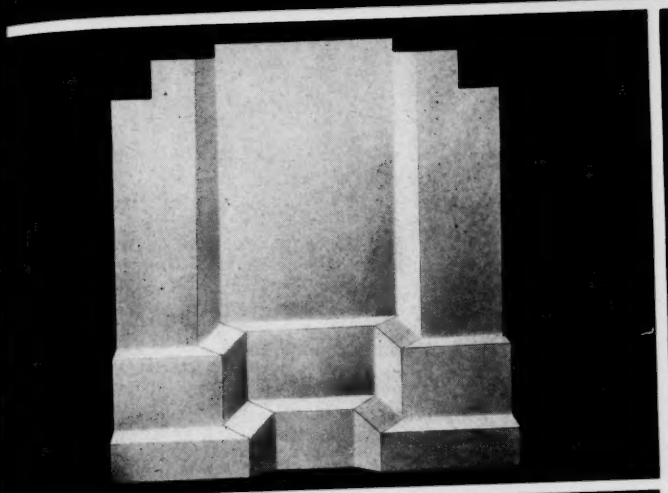
Signs may be made of sheet metal—either lithographed or silk screen process—or they may be formed from wire. Wire formed signs are usually limited to a few words, but they give an unusual, definitely modern, effect.

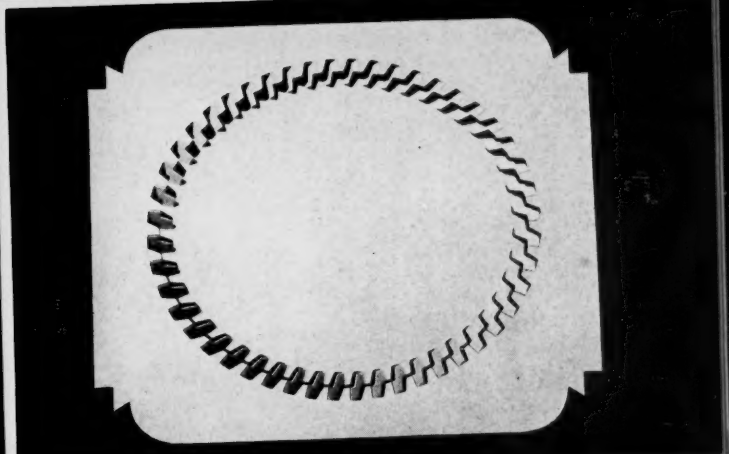
Although many stock designs are obtainable, most displays are built to order. This means that the user, in most cases, gets a display that is distinctively his own and one that is made to bring out the best features of his product.

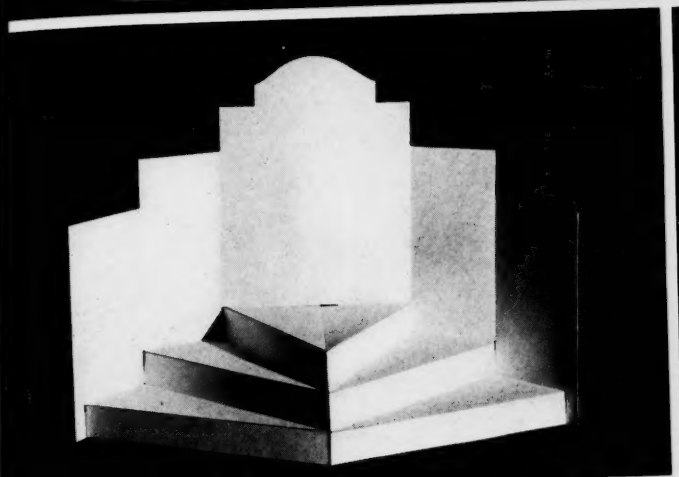
Manufacturers of display racks are usually well equipped to give ideas and suggestions. Some have their own designers who can submit sketches of proposed displays. Frequently samples are made up and the final display worked out from them. In asking for suggestions it is well to give the size of the package, number you wish to display, price limitation for the rack, type of display (folding, rigid, or knock down), style (counter, floor, wall, etc.), weight the display must carry, and which products are to be featured.

The D F C Principles of Display Construction* can help you create more distinctive displays!

Original – Practical – Economical















Unlimited variations of construction and design, embodying these principles, are available through regular lithographic and printing sources.

DISPLAY FINISHING COMPANY, Inc.

21-16 44th Road — Long Island City, New York

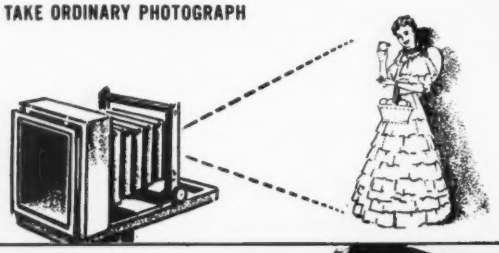
Mounters and Finishers to the Lithographic Trade

*PATENTED

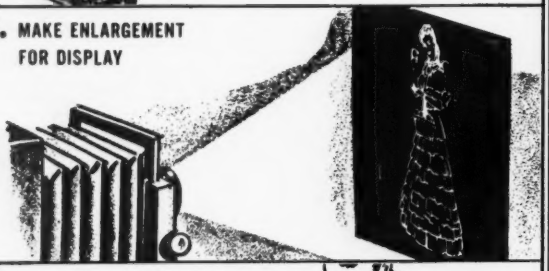
THE OLD WAY

"INDIRECT COLOR"

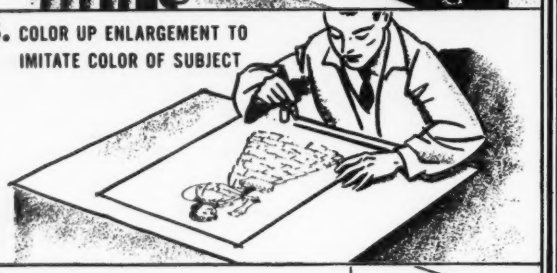
1. TAKE ORDINARY PHOTOGRAPH



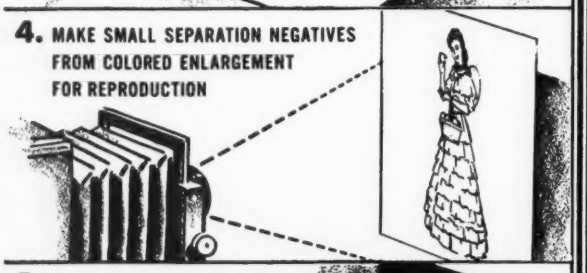
2. MAKE ENLARGEMENT FOR DISPLAY



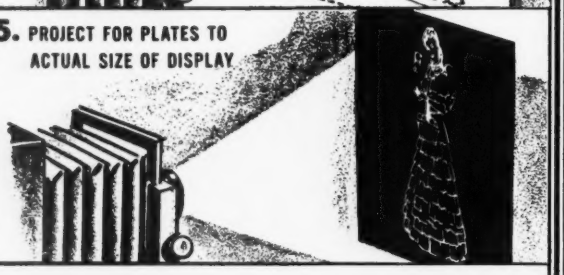
3. COLOR UP ENLARGEMENT TO IMITATE COLOR OF SUBJECT



4. MAKE SMALL SEPARATION NEGATIVES FROM COLORED ENLARGEMENT FOR REPRODUCTION



5. PROJECT FOR PLATES TO ACTUAL SIZE OF DISPLAY

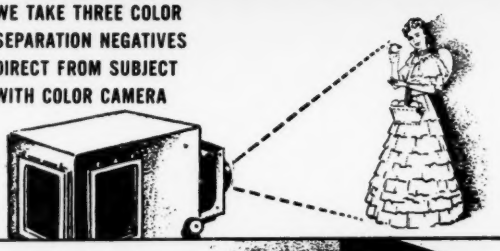


THE OLD WAY, you took five steps to reproduction. You lost something more at each step. And what you lost was — LIFE!

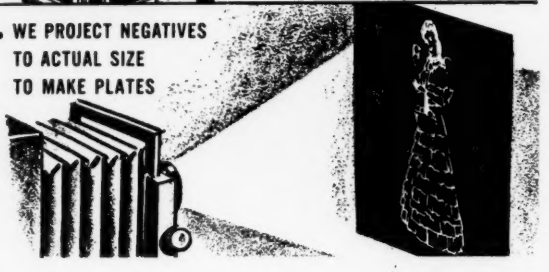
DIRECT COLOR

THE NEW WAY

1. WE TAKE THREE COLOR SEPARATION NEGATIVES DIRECT FROM SUBJECT WITH COLOR CAMERA



2. WE PROJECT NEGATIVES TO ACTUAL SIZE TO MAKE PLATES



3 steps less

between

LIFE

— and the printed page

THE NEW WAY, we take two steps — lose nothing — preserve all the brilliance, vivid color and expression. In short, we have captured — LIFE!

XUM

DIRECT COLOR

A great step forward in Window Display pioneered by EINSON-FREEMAN

Four years ago, we produced a relatively small window card for Bausch & Lomb, direct from the negatives of a color photograph. . . . The result was so exquisite, almost gem-like in its perfection, that we determined to experiment to find out if the same result could be obtained even if the negatives were enlarged to giant size — without loss of color, brilliance, details or definition. This time the result was so startling in effectiveness and realism that it marked the beginning of a new era in window display.

In less than three years, this new development pioneered by Einson-Freeman — direct color photography reproduced by the deep-etch process—has advanced store display literally decades in sheer force of *realism,* pulling power and effectiveness.

Alert advertisers and advertising agencies had already perceived (and *proved,* in printed material and periodicals) the electrifying effect of this new selling force. But it was Einson-Freeman's pioneer experimentation that made it possible to apply it, with even greater impact, magnified by greater size, to the field where "visual selling" counts for most — at the final point of contact with the consumer, the dealer's windows and store.

Here is a graphic chart to show why—and how—this process puts new "punch," power, vitality into a medium only recently recognized as a potent selling force of the first magnitude. Here is the reason why, by former methods, you could only get *pictures* of people instead of *real* people; a pallid second-rate, second-hand reproduction, while this new process can give you vivid, vibrant, rich *reality.*

And if you want to see how much difference it can make, if you wish to know how much more this "new realism" can *sell,* call an Einson-Freeman executive to show you and tell you the sales-story of the brilliant originals of the displays shown below.

N. B. A fascinating trip through the entire process of producing the modern display may be arranged by appointment, at your convenience.

Write, wire or 'phone —

EINSON-FREEMAN CO. INC.

Lithographers LONG ISLAND CITY, N. Y.





Plastic Displays and Fixtures

by H. S. SPENCER*

Today there are practically no limitations to what may be done with the various types of plastics being offered. Laminated plastic sheets can be secured sufficiently large to make traveling or counter displays for drug and department stores and for exhibition booths. For point-of-sale displays, urea plastics have been used in combination with both laminated sheet stock, wood, and neon tubes. Ureas have the advantage of translucency and are particularly beautiful when brilliantly lighted. The recently developed transparent plastics have been effectively used for small displays where the object for sale needed protection against handling, yet should be visible from all sides. The advantages of these materials, of course, are that they are less perishable than glass and strictly modern in appearance. Electric razors of several manufacturers have been so exhibited. Phenolic plastics, while opaque, have been successfully used for displays of almost all types and sizes for many diversified products.

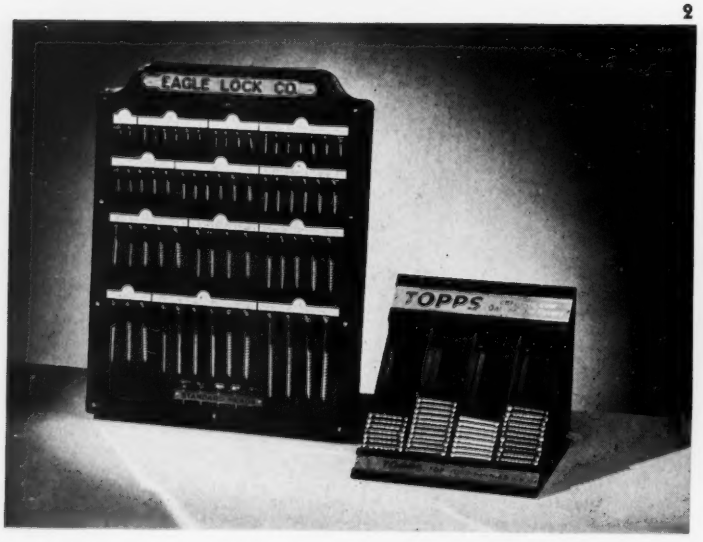
Plastics lend themselves exceptionally well to originality of design and are readily adaptable to trade mark as well as replica design. They are formative to almost any shape; rectangular or round; angular or sloping for stairstep or pyramid; for stationary or rotary types. Other excellent reasons for making displays of plastic material include finish, durability, permanence, lightness of weight, great strength and ease of handling. Because these inherent characteristics are actually visible to the buyer, a plastic display adds an air of quality to the merchandise it contains, speaks well for the manufacturer and marks the dealer as modernly progressive. These are essential sales features in any line and any subtlety which may help bring about their inference should be given thorough consideration by the designer.

Of course, in the formulation of any display the product and problem of sale or distribution must be given heed before the display is designed. Then, the

* Durez Plastics & Chemicals, Inc.



1



2



3

1. Urea moldings form the frame for this glass display sign. Photo courtesy Beetle Products Div. of American Cyanamid Co. **2.** Permanent counter displays with riveted metal signs. **3.** Counter merchandise display with detachable penny cup at rear. Courtesy Durez Plastics & Chemicals, Inc.

SPEED UP TURNOVER

with

Merchandise will not move unaided. The value of general advertising is enhanced by the use of "sales-spot advertising." To remind consumers of previous favorable impressions . . . to suggest purchase NOW . . . these "U-S" products have demonstrated their power to accelerate sales.

STORE DISPLAY MATERIAL



SALES HELPS



OUTDOOR ADVERTISING



by

"U-S"

The U.S. [illegible] COMPANY

HOME O[illegible]

AMERICAN [illegible]

ATLANTIC [illegible]

DONALDSON [illegible]

XUM

Our Metal Displays Build Sales for You!





ANYWHERE and EVERYWHERE!

Your Product out in front . . . compelling attention by an irresistible combination of color and design when your display is produced by Advertising Metal Display Co.

Metal Displays last longer . . . enrich prestige of the product they show, as the leading manufacturers in practically all industries have discovered. A metal display is your salesman every day in thousands of retail outlets throughout the land. Be sure it is worthy of your product and prestige!

Allow us to design an effective and economical metal display for your particular product. We are equipped to produce a thousand or a million displays of uniform high quality at low manufacturing costs.

Unmatchable sales appeal of high grade color lithography, or brilliant DuPont Hi-Baked Dulux silk screen processes are available.

Write for illustrated booklet and suggested display designs for your product. . . . You are cordially invited to avail yourselves of our service.

There is no obligation for this.

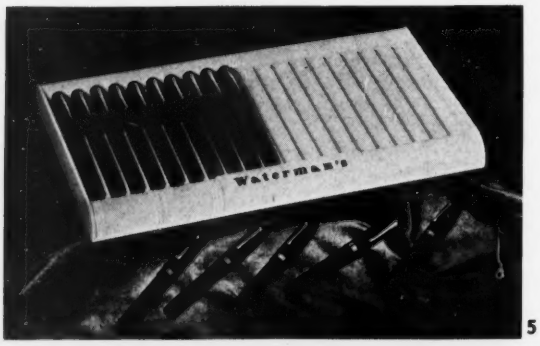
ADVERTISING METAL DISPLAY COMPANY

Factory and General Offices: 125 North Green Street, Chicago, Ill.
Eastern Division: 2 East 23rd Street, New York, N. Y.

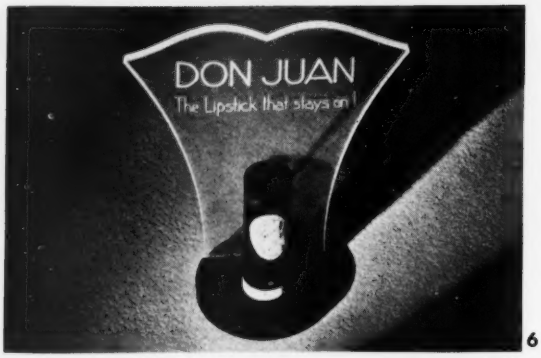
XUM



4



5



6

4. Permanent counter stand with curved glass hood and cast resin base and frame. Courtesy Catalin Corp. **5.** Molded urea fountain pen display tray. Courtesy Beetle Products Div. of American Cyanamid Co. **6.** Polystyrene miniature display. Courtesy Bakelite Corp.

display has to sell the retailer before it will be used to sell the customer. The designer must take into account the retailer as well as the consumer. Can it be used easily and prominently by the retailer? How much space will he allow on his counter, floor, shelf, window, to help him move that particular merchandise? Is it a low or high profit article? Does it turn over quickly or slowly? Here again enters the question of convenience. Is the consumer to help himself, be served by the retailer from the display, or is it simply an eye catcher to invite examination and question?

Smokers' pipes, for example, are slow-moving as compared to chewing gum or cigarettes. Therefore, a proper display should be made of a permanent, long-lived material, and plastics fit this requirement. A plastic display is easily kept clean, will not dog-ear or become chipped, marred or broken. Indentures for holdin pipes can readily be molded-in, and roll leaf or wiped-in lettering of real permanency secured. Every pipe smoker wants to handle the pipe before he buys. Therefore, the design of the display should permit this, make it easy to pick up the pipe, look it over, balance it and return it to the display easily and try another. There's no such problem with gum or cigarettes.

For displays of the counter type having storage facilities, phenolic and urea plastics have lent themselves because of their lifetime durability and compactness. They are particularly adaptable to such items as razor blades, aspirin, chewing gum, etc. Displays must be styled, must be modern, must get your eye—stop you.

All plastics lend themselves to lettering, through cut-out letters, celluloid letters cemented to the surfaces, raised metal or metal inlays, the roll leaf process of printing in gold and silver, or to the usual wiped-in pigment type of lettering.

The designers should determine the type of plastic to use, first, of course, from the angle of the purpose they wish to accomplish. Most designers know that laminated plastics can be bought in various thicknesses and sizes and cut or sawed out to shapes or pieces desired. The cast phenolics are machined or turned to the desired sizes and may be bought in sheets, rods or tubes. The urea or phenolic plastics are sold in the form of molding compound and must be molded under heat and pressure to their final shapes. Anything that can be engraved in the mold can be reproduced on the plastic piece. Pieces may be of almost any color and have partitions, trays, drawers or doors. They may be one-piece or several. Various surface finishes may be obtained in accordance with the treatment on the mold surface, though the natural finish is an extremely rich, lustrous, satiny surface.

Cost is always an important consideration in displays (as in everything else, these days) and plastic materials have "met the enemy and they are ours." When all the elements surrounding the inception of a display are considered, the great diversity of plastic materials available soon proves to the producer that he has found a supply which gives him a wide range of cost coverage. For ten, for a thousand, for ten thousand; for hand-made, die-cut, machined or molded pieces, the laminated, cast or molding plastics may be called upon to do the job and do it well and economically.















A few of the many advertisers who recognize — by continued business — the value of our creative and reproductive services.

Lithographic Advertising

KINDRED, MAC LEAN & CO., Inc.

43-01 TWENTY SECOND ST.
LONG ISLAND CITY, N.Y.

PHONE STILLWELL 4-7212

Wooden Displays and Cabinets

by MILTON WEILL*

Wood counter merchandise displays occupy a rather unique position in the display world. They are so constructed as to be of permanent value. The manufacturer who furnishes them to his trade expects more than a temporary place on dealers' counters. He expects the dealer to use the display as a fairly permanent fixture. He knows that a counter display will move his merchandise from a hidden place inside the counter to a strategic at-the-point-of-sale position on top of the counter, right before the consumer's eyes.

Wood counter displays of this type are used three ways: In most cases they are tied up with a merchandising deal. The manufacturer groups together an assortment of merchandise usually including a new product whose introduction he wishes to dramatize. The display is a part of the deal, its cost being included in the price of the deal. Since it is in the retailer's interest to feature the display on his counter, the manufacturer is automatically assured that his products will have the best possible selling position.

In some cases the display is sent out by the manufacturer to help move merchandise that the dealer has already purchased. In this latter case, there is no tie up with an assortment of merchandise. The display is sent gratis to the dealer, in order to help him sell the manufacturer's merchandise which the dealer had previously purchased.

In other cases the display is used to help introduce a new product. In these instances, the display is sent to the dealer irrespective of the amount of merchandise he buys, so as to insure a prominent position on the counter for the introduction of the manufacturer's new item.

In every case wood counter merchandise displays are made up in a style and of materials such as the dealer himself would use, were he ordering the display himself for his own store. Wood is usually combined with glass or mirrors, with chrome, brass or other types of ornamentations added for decorative purposes. Frequently provision is made for illumination either in the form of a steady burning electric light, or a flasher bulb—either provision making for increased effectiveness.

During the past year natural wood finishes have been most popular. It has been found that this type of finish harmonizes best with the average dealer's counter, whether it be drug store, haberdashery shop, specialty shop or department store. Other finishes are of course available—oak, mahogany, and solid colors.

* Arrow Manufacturing Co., Inc.

1. Wood display and demonstrator for razor and accessories. Note use of bent transparent acetate window. Courtesy General Display Case Co. **2.** Illuminated wooden multi-step watch display. Courtesy of the Arrow Manufacturing Co., Inc.

1



2



XUM

PUT YOUR GOODS IN THE SPOTLIGHT

TESTED MASS DISPLAYS

★ ***Move More Merchandise***

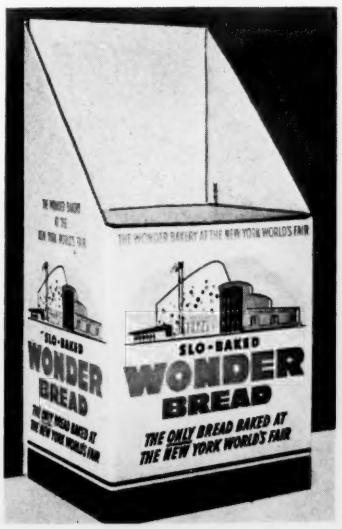
Get your product off the shelf and onto a prominent floor display where the buying public can see it. That's the secret of volume sales and profits!

Storekeepers gladly give your goods preferred selling position when you provide ORPCO Mass Display Units. These modern merchandising displays are attractive and practical... made of strong corrugated board and printed in bright colors... individually designed to fit the product in size, style and color.

★ ***Sell It Faster***

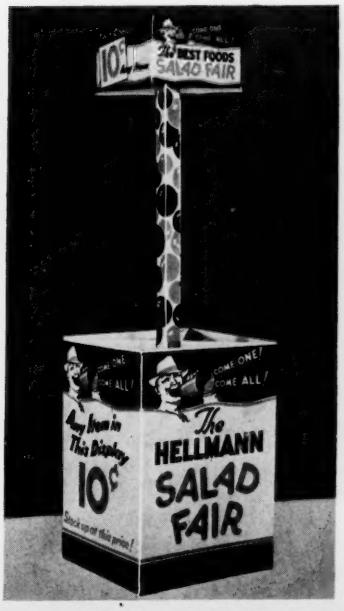
We have successfully applied our merchandising display experience and facilities to a wide variety of products. Displays pictured here are typical examples of ORPCO "merchandise sellers". Let us help *you* with your next display problem. Write our nearest office.

ORPCO DISPLAYS ARE SURPRISINGLY LOW IN COST



WONDER BREAD finds that this striking ORPCO piece provides plenty of display space for a necessarily bulky product... and sells the goods — fast!

BEST FOODS knows how to sell salad dressing quickly and economically. They chose ORPCO to make this novel Salad Fair display (below) for them. It clicked!



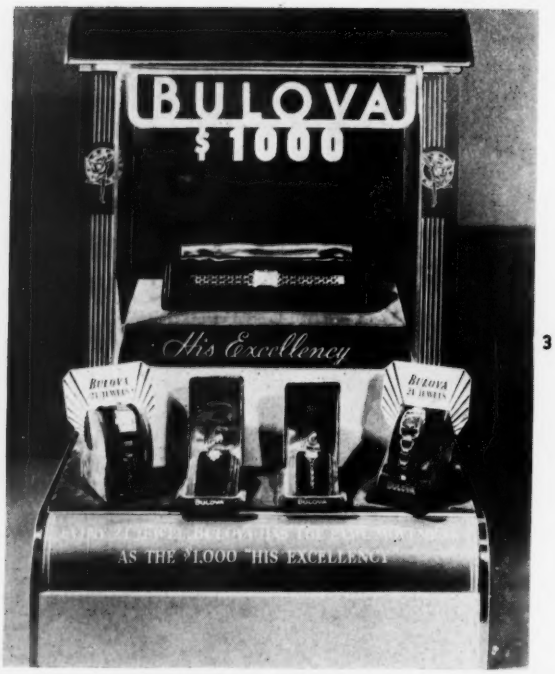


REAL SALES MAKER. This self-service Gelatin Dispenser, with flavors well organized and identified will give long service — it's an ORPCO Display.

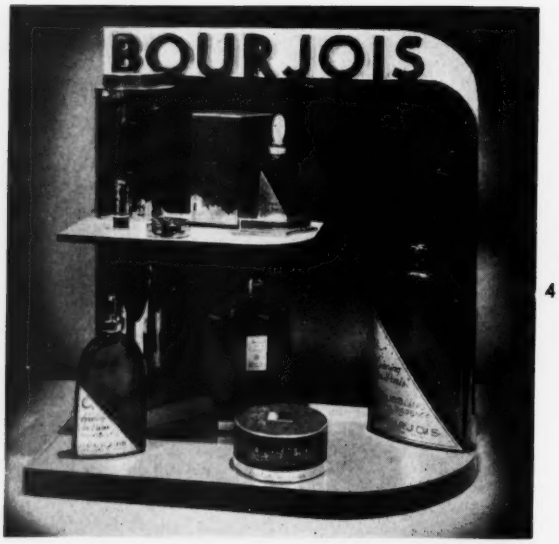
THE OTTAWA RIVER PAPER COMPANY • TOLEDO • OHIO

SALES OFFICES:

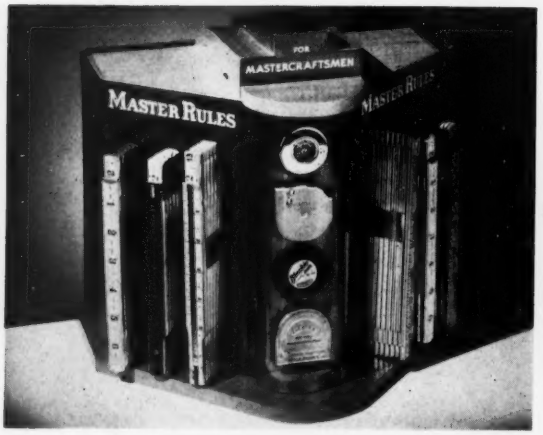
55 West 42nd Street, New York, N. Y.
6970 W. Jefferson Street, Detroit, Mich.
82 West Washington Street, Chicago, Ill.
701 North Eutlaw Street, Baltimore, Md.



3



4



5

In every case this type of display must be used only for the display of merchandise. It serves no function whatsoever when used by itself, being as its name implies primarily a merchandising unit. It forms a background or setting for the proper presentation of the product. Extra compartments for reserve stock are often provided. An additional advantage of this type of display is that it will remind the dealer to restock when the sale of an item leaves an empty space and makes the display, therefore, less attractive. This reminder forces the retailer to keep a closer check on his stock, thus compelling him to reorder more frequently. The additional orders which he places for merchandise used on the display help the manufacturer further to absorb the original cost.

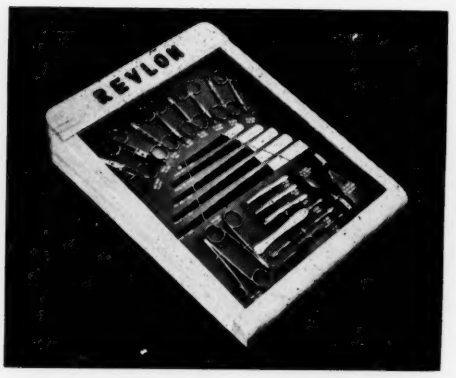
It is interesting to note that displays that have a novelty appeal because of their seasonable tie-up, or displays that have moving parts which enable the consumer to play with the display, are of definite value in attracting the eye and holding the attention of the prospective customer. The same holds true of displays which enable the consumer to sample a product like powders or perfumes, or displays which have a self-service feature.

It has been found that mirrors on wood displays of this type not only increase attractiveness to the display itself, but really draw the consumer, particularly the female, to the display for the obvious purpose of using the mirror. Once this line of attraction has been established, it is an easy sequence for the looker to become a buyer of the product displayed.

Since wood displays do not involve the use of any special dies, for obviously wood can be cut to almost any shape, there is great flexibility in the type of design that can be created. For the same reason it is not necessary for the manufacturer to place large orders. He can try out the display in smaller quantities.

The advertising message on a wood counter display must necessarily be very brief. Usually the name of the product itself with possibly a listing of the items and prices are all that can be used. This type of trade mark or very brief message can be hot stamped directly on the wood in gold or silver or printed in any color.

3. Wood, metal and fabric combine in this illuminated watch display. Courtesy Arrow Manufacturing Co., Inc. **4.** Wood and chromium with cut-out wood letters form this two-shelf counter unit. Courtesy Arrow Manufacturing Co., Inc. **5.** Hardware display with rear storage cabinet. Courtesy General Display Case Co. **6.** Glass topped wood counter display. Merchandise withdrawn through rear. Courtesy Arrow Manufacturing Co., Inc.



6

XUM

The EYES have it
. . . at a single glance



People's eyes become *buyers' eyes* when they see through "VUEPAK" to the product displayed within it. The flawless transparency of this modern packaging and display material not only shows but *enhances* the natural color, finish and beauty of the merchandise it displays.

Pictured above are three top-notch sales makers . . . displays of "VUEPAK" created for Lady Buxton billfolds and cases and Kaynee Shirts by Jos. H. Meyer Bros., New York; and for Lederle Laboratories, Inc., in an illuminated counter and window display by Design Center, New York.

Designers and builders of packages and displays find Monsanto "VUEPAK" easy and economical to fabricate. There is a size and weight of this rigid, transparent material for every purpose. It can be formed into any practical shape, either in packages wholly of "VUEPAK," or in combination with other materials. For complete information fitted to *your* display or packaging requirements, inquire: MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield, Massachusetts. District Offices: New York, Chicago, Detroit, St. Louis, Los Angeles, Dayton, Montreal.

MONSANTO PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND



Motion and Light Mechanisms

The use of light, motion, and the illusion of motion, either singly or in combination, has long been accepted as a means of increasing the attention value of displays. The exact value added to any display by the inclusion of a motion or light effect cannot be predicted with accuracy. However, recent tests would seem to indicate that this value, while not as great as sometimes claimed, may, in certain instances, rise as high as three or four hundred per cent.

In a recent survey on the subject, tabulated in detail in Table 1, forty-five out of fifty national advertisers (using this type of display extensively) reported that, in their experience, motion displays attract substantially more people than still displays. In another survey, individual instances were cited in which the number stopped by the display in motion exceeded those stopped by the same display when still by from 805 per cent to as high as 2417 per cent.

In another test, conducted at an exhibition held in Detroit, three pairs of displays were used, one of each pair being a motion unit, the other the nearest comparable still unit which could be found. The excess in the number of readers stopped by motion over the group stopped by motionless displays varied from 422 per cent to 2815 per cent.

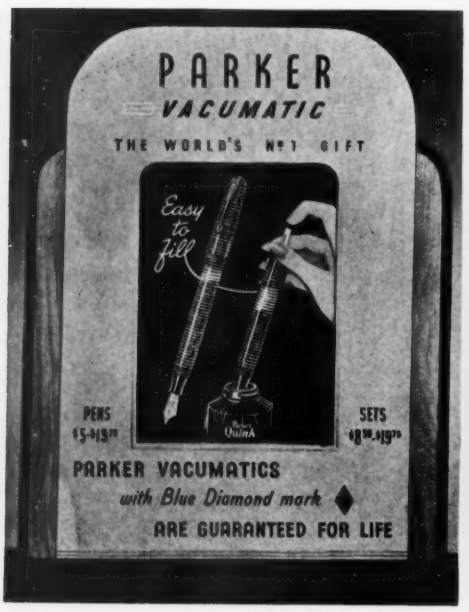
These tests, however, and all similar claims, must be considered as only partial indicators of the comparative value of motion and light in producing display effectiveness. The average of a much larger sampling of such displays might prove much lower and yet in many instances could probably be depended upon to more than justify use of motion or light displays.

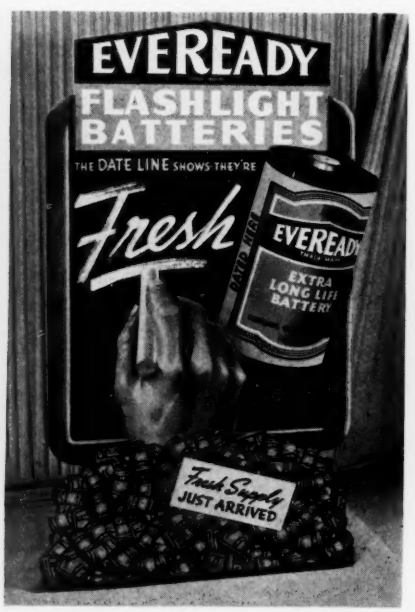
Certain basic considerations may be set down by which a manufacturer may judge the probable effectiveness of such units for his own product or products. He must consider the type of product—whether it will gain or lose by motion display. The copy to be used likewise will affect his choice. The type of store and the class of storekeeper asked to use the unit may induce a selection or rejection of this medium, since motion displays ordinarily require more attention and care than still units. The cost of the mechanism in relation to potential sales in an average outlet may prohibit the choice of motion, since motion devices, while varying greatly in cost according to their elaborateness, all tend to add substantially to the total cost of the display.

Finally, the manufacturer will consider the factors of longer life, repeated use in store after store, transit costs, and packing costs, and the possibility of passing on a portion of costs to the merchant on a deal or share-cost arrangement. The decision, in each case, must be keyed to the special merchandising set-up of the individual firm, although governed by the foregoing basic considerations.

Types of Mechanisms

Various types of standardized motion-producing mechanisms are available, usually being purchased for in-





1. Motion and light combine to demonstrate the mechanics of pen filling. Designed by the W. J. Rankin Co. Motion mechanism by the Speedway Manufacturing Co. **2.** The hand in this unit swings back and forth so that the chalk seems to be underlining the word, "fresh." Battery operated motion unit supplies the power. Display created by the Forbes Lithograph Mfg. Co.

Upjohn

Natural

Vitamin Products

LIQUID



DROPS



PERLES





UPJOHN

Makers of Fine Pharmaceuticals Since 1886

An example of Keen Merchandising . . .
Created and Produced by FORBES



Creators Designers and Producers of

DISPLAYS
POSTERS
CAR CARDS
BASKETS
WRAPPERS

BUSINESS STATIONERY
PRINTED CELLULOSE
PACKAGE INSERTS
CALENDARS
ART PLATES

BOOKLETS
FOLDERS
FESTOONS
LABELS
CARTONS

Rx Prescription for Successful Advertising

A powerful appeal to parental eyes and emotions has been instilled in this outstanding display by sound creative thinking . . .

Intelligent design and judicious color spotting incite shopper interest . . .

A minimum of copy presents a convincing story . . .

Faultless reproduction bespeaks quality of product and prestige of sponsor, fostering confidence in all the featured items.

In other words, this is a *positive* display that will stimulate *positive* buying action.

This same originality, thorough development and outstanding craftsmanship will be made an integral part of any of the items listed on this page if you will but avail yourself of Forbes' creative co-operation.

Join the imposing line-up of successful Forbes clients, NOW.

FORBES LITHOGRAPH CO.

THE SHOP BY THE SEA

P. O. BOX 513 • BOSTON

NEW YORK CHICAGO CLEVELAND ROCHESTER DETROIT

XUM

Now Available

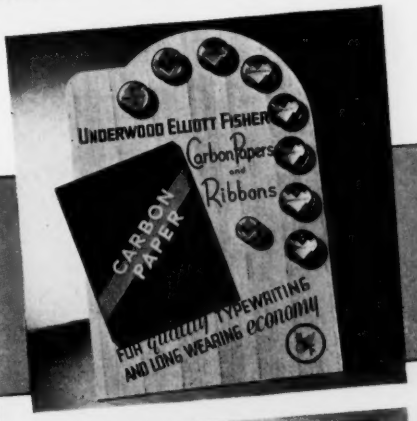
1. SHORT RUNS OF LARGE DISPLAYS 2. LONG RUNS OF SMALL DISPLAYS

produced by MERIT Display

MERIT fills a gap between the large lithographer and the general printer. Our complete service under one roof—designing, printing, die-cutting, mounting and finishing—is geared to the elimination of high preparatory costs.

MERIT SOLVES PROBLEMS...

Underwood's Problem:
To display 9 varieties of typewriter ribbons and 1 box of carbon paper for test campaign in branch sales offices.



Solved by MERIT

By using a wood veneer paper with two-color silk screen lettering, mounted to heavy cardboard and die-cut to hold each unit securely. Packages stand out in contrast to background. Acetate laminating adds brilliant finish, makes display dustproof, stainproof, and washable.

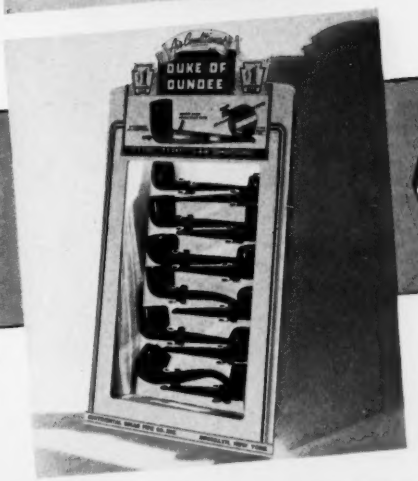
McCallum's Problem
To introduce new Rib Row Heel stocking by displaying actual product.



Solved by MERIT

By working with agency. Flanged papier mâché form was draped with hose and glued on cardboard backing. Specially die-cut cover was silk screened and mounted under divided pressure.

Continental's Problem
To create a counter unit for pipes that was pilferproof, refillable, inexpensive.



Solved by MERIT

3-color printing gives true reproduction of pipe and inner filter. Die-cut for Vue-Pak window giving high visibility for pipes and protects them from dust. Rubber sleeves protect polished pipe surface from metal clips. Pipes mounted on removable slide insert making display refillable.

N.B. All of these types of displays lend themselves to other products. If the problem at hand is not primarily one of display, but rather a part of your product itself—if it in any way encompasses the use of cardboard—we can handle it.

MERIT DISPLAY CARD CO.

DESIGNING, PRINTING, SILK SCREENING, DIE-CUTTING, MOUNTING, FINISHING, LAMINATING

36 WEST 20th STREET · CHELSEA 2-4217-8-9 · NEW YORK, N. Y.

XUM

stallation into the display by the lithographer, display builder, or metal-display producer. These include:

CLOCKWORK MOTORS: Low in cost but requiring periodic winding and hence unsuitable for units placed in inaccessible windows or where the dealer cannot be counted upon to show the necessary interest.

ELECTRIC MOTORS: Operated from house current, available in AC, DC, and universal types and in widely varying power and price groups.

BATTERY MOTORS: Operated from dry cells but otherwise similar to the house-current types. Essential in some isolated areas or for export where voltages, etc., are unknown.

SOLINOID MOTORS: These are simple electrical devices which create a reciprocating motion, and which may be converted into other forms of motion by supplementary mechanisms. They are low in cost and simple to set up and operate. Their sturdiness is an important factor. Both battery and house current types are available. Solinoids are further grouped as "plunger" and "pendulum" types.

FLASHERS: These are devices to cause an intermittent flow of current and thus light one or more bulbs for pre-arranged periods. Types vary from the simplest to extremely complex arrangements for securing elaborate effects.

HEAT MOTORS: These achieve motion by the action of rising heat currents, usually from an electric bulb, upon vanes attached to the device. A rotary motion is thus secured in conjunction with light.

TURNTABLES: Either motor driven or activated by clockwork. These can be had in types to support various weights. Some operate at fixed speeds, others are adjustable. Some types use so-called stops to secure an alternating partial revolution with an intervening period at standstill. These stops are adjustable so that the table can be set from three stops per revolution to as many as twelve or even more stops. The number of degrees of motion between stops can be adjusted so that, for example, a half revolution may be followed by two quarter turns.

VIBRATORS: Either electrically operated (house current or battery) or clockworks types are available when a fast vibratory motion is desired.

The use of simple motion devices does not limit the display planner as to the variations of motion attainable

TABLE 1

For the purpose of securing concrete data, relative to the sales value and effectiveness of motion, in window display advertising, the RESEARCH DIVISION OF THE UNITED STATES PRINTING AND LITHOGRAPH CO. recently made a survey among fifty outstanding users of point-of-sale advertising.

The following data is based upon information obtained from these concerns:

1. Number of Motion Displays Installed

   Twenty concerns who reported quantities, showed a purchase of 73,132 displays or an average of 3,657 each.

2. Type Display Used

   Of these displays, 42,742 were of the oscillating type, using either the pendulum or spring type motion unit. A large proportion of these were battery operated.

   The percentages below relate to the NUMBER OF CONCERNS reporting—not the NUMBER OF MOTION DISPLAYS used:

Clock Motor	8%	Heat Motor	10%
Electric Motor	17%	Pendulum	20%
Flasher	13%	Turntable	9%
		Vibratory	23%

3. Displays Installed by

Dealers	82%
Sales and Installation Service	18%

4. Did Motion Displays Operate Satisfactorily?

   72% Yes—8% No—20% Fair

5. Did Dealers Co-operate in Using Them Correctly?

   79% Yes—0% No—21% Fair

6. Did Dealers Like Motion Displays?

   88% Yes—8% No—4% Fair

7. Were Motion Displays Shown Only Once in a Dealer's Store?

   62½% Yes—37½% No

8. Were Motion Displays Routed from Store to Store?

   42% Yes—58% No

3. Front and back views of three recent motion displays. The Santa blinks his eyes and moves his mouth, a pendulum solinoid doing the trick. **4.** Various portions of the Zenith display light up in a pre-arranged sequence. A group of flasher mechanisms are utilized. **5.** A pendulum solinoid swings a large pen back and forth in this unit. Parker and Zenith displays by Milton Stern & Co. Mechanisms of all three by the Speedway Manufacturing Co.

3 4 5





XUM

CHASPEC MANUFACTURING CO.

16 West 61 St. **NEW YORK, N. Y.** Clrcle 6-3530

CHASPEC displays add a third dimension . . . a new realism and appeal . . . to point-of-sale merchandising.

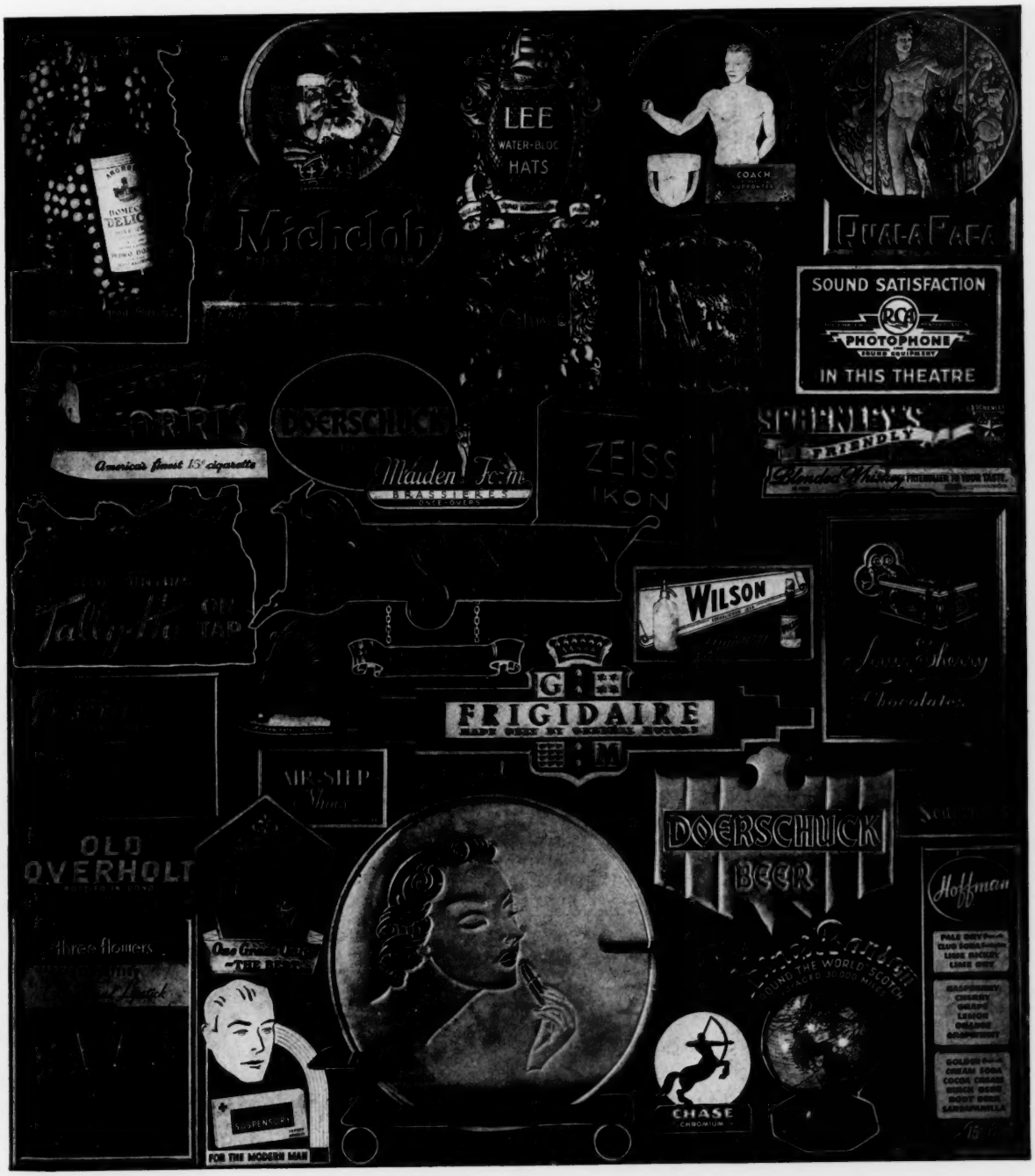
These displays are permanent . . . designed, embossed, and printed for long term salesmanship. Their color, texture, and mass project them into instant attention, raise eyes and fingertips to them.

You yourself have, no doubt, already admired CHASPEC displays in taverns, department stores, restaurants, etc. They appeal to you . . . as they will appeal to *your* buying public.

The materials used comprise cardboard, wood, metal, glass, foil, celluloid and composition. Our processes include printing, stamping, embossing, moulding, laminating, woodworking, silk screening and die-cutting; an enviable combination of manufacturing facilities under one roof.

Whatever your needs . . . whatever your message . . . CHASPEC'S special process of high relief . . . CHASPEC'S 17 years of ingenuity in design and merchandising . . . can create a truly handsome display for your product . . . supplied in any quantity at reasonable cost.

See our latest developments in luxurious packaging.

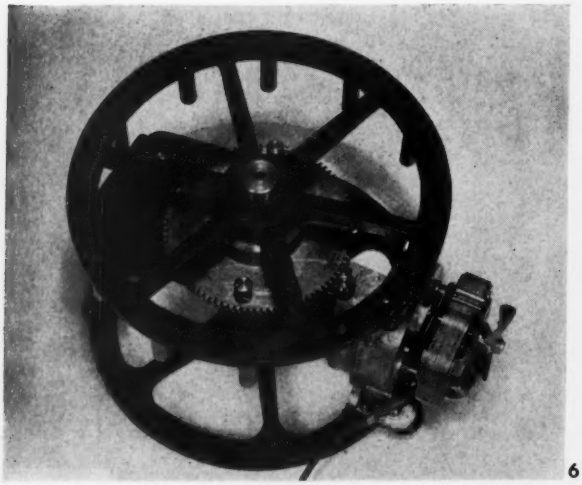


in the finished display. A few of the major variations are illustrated in Table 2.

Design of Motion and Lighted Displays

Makers of motion mechanisms and lighting devices seldom sell directly to the display sponsor. They do, however, work closely with both sponsor and display manufacturer—i.e., lithographer, metal-display fabricator, etc.—in adjusting or modifying their devices to secure the desired effect. It is usually best to call in the display manufacturer, who will assume final responsibility for the complete unit, and to work through him. In all cases, a full-size operating dummy should be made and tested under actual operating conditions similar to those to be found in the field.

Certain considerations will tend to govern design, apart from those of advertising effectiveness. The cost of the unit as a whole will, of course, affect the choice of motion mechanism. Operating costs will prove important to certain classes of dealers and should be thoroughly checked in advance. In the case of battery-operated displays, advance planning should correlate between the probable period of installation and the life of the battery or batteries under the current-demand conditions imposed by the display. Shipping of mechanized displays always requires more care, more packing, and greater expense than is called for by non-mechanized displays of similar weight, type, and dimensions.



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TABLE 2

TYPES OF MOTION

1. Vertical rotary motion, achieved by direct or friction drive. Usually used in conjunction with a mask that permits only a part of the revolving wheel to show through. Solinoids may be used to secure rotary motion when little driving power is needed.

2. Horizontal rotary motion, as with an ordinary turntable.

3. Horizontal stop-and-start motion—achieved with "stop"-equipped turntable.

4. Oscillating motion, an even movement back and forth. Often achieved with a solinoid type of motor and a pendulum. However, rotary motors can produce oscillations.

5. Two-speed oscillating motion. A variation of the above secured by adjustment of the solinoid or motor mechanism.

6. Complex oscillations, such as the motion of a ship, a horse, etc., can be secured by gear and cam and similar attachments.

7. Rocking, swinging, and see-saw motions are secured by the use of solinoid motors, usually of the plunger type.

6. Turntable mechanism equipped with removable "stops." The device is so constructed that each of the round bars projecting from the under side of the wheel will stop the table for a desired period of time and then permit the resumption of motion. Removal of any bar eliminates a stop at that particular point, thus permitting a large number of variations of the stopping-starting motion. Manufactured by Andrews and Perillo. **7.** Small turntable with base and revolving platform molded of phenolic plastics. Such a unit may be used in exposed position on counters as well as in windows.

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Modernistic Displays

WIRE—SHEET METAL—MASONITE
FABRICATED MATERIALS

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THAT FEATURE AND COMPLIMENT YOUR PRODUCTS

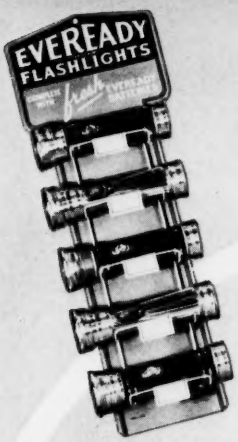
WRITE FOR POINT-OF-SALE DISPLAY SUGGESTIONS FOR YOUR PRODUCTS

UNION STEEL PRODUCTS CO.

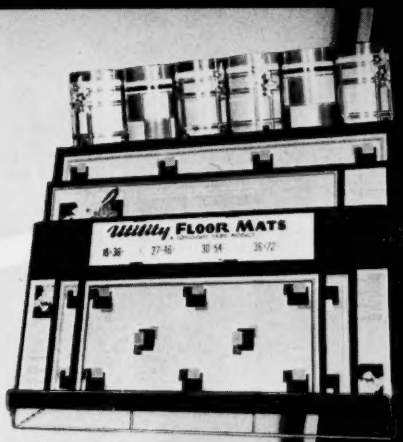
801 Pine Street, Albion, Mich.

CREATORS · DESIGNERS
MANUFACTURERS

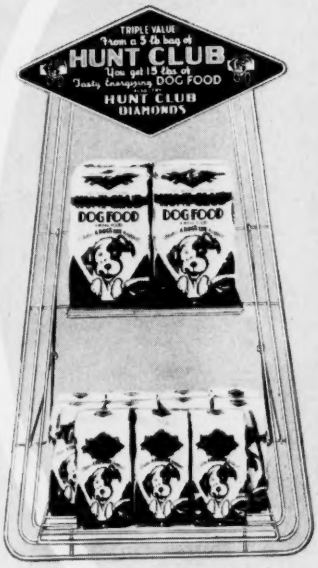
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UNION COUNTER DISPLAY



UNION FLOOR DISPLAY



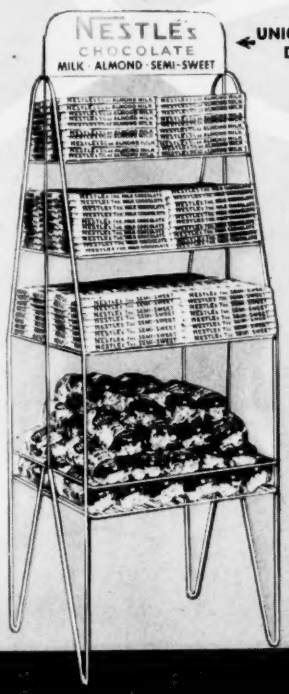
UNION FLOOR DISPLAY



UNION COUNTER DISPLAY

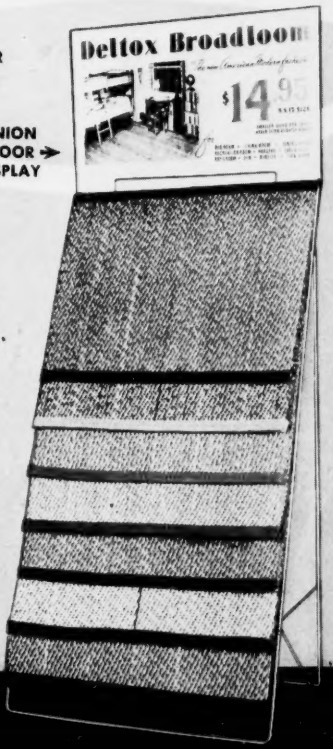


UNION WALL DISPLAY



UNION FLOOR DISPLAY

UNION FLOOR DISPLAY



UNION FLOOR DISPLAY



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Decalcomania for Display

The art of producing decalcomania is so highly skilled and the process so exacting that production speeds are relatively slow; particularly when compared with modern high-speed printing and lithography. Thus, for most purposes, the use of decalcomania would be prohibitive in cost; particularly when the package or display is intended for only a short life.

However, when extreme durability of color (particularly when under adverse conditions) is of major importance, no method of decoration offers the advantages of the decalcomania process. Decalcomania transfers enable the reproduction of advertising messages upon glass, metal, wood, etc., a proceeding which would be uneconomical if painted by hand. Even where hand painting might be considered as an alternative, the lower cost of decalcomania gives it an advantage not easily out-balanced, and, as in the case of truck decoration, the speed with which the decalcomania may be applied serves to provide a further cost saving over any other type of decoration, which has induced its almost universal use in this field. In every one of the instances cited—and all those others in which decalcomania transfers are used, there is an element of permanence—not merely permanence, but permanence plus excellent appearance—which plays an important part in inducing the choice of this unique process.

Decalcomania designs are printed either "face-up" (positive) or "face-down" (negative). On "face-up" transfers a solid coating of heavy white is first printed on the gummed paper. This is repeated through several impressions until a backing has been deposited on the decalcomania thick enough to insure a sturdy support for the actual design. Each one of the individual printings must be thoroughly dry before the next impression is put on, thus accounting for one of the main cost factors in decalcomania preparation.

Designs of the negative or "face-down" type are, naturally, printed in reverse order, the visible colors being printed first followed by the backing colors. Today, more and more transfers are of the "positive" type as the transfer into final position is quicker, and hence less expensive by this method. However, when open letter transfers are required—i.e., designs with large open or transparent spaces—the "negative" type must be used, since otherwise the letters would break apart and move out of position without the underlying varnish coat to hold them together.

So, too, must consideration of the time element induce comparisons, not with printing and lithography, but with the slower hand decorative processes. Thus, it takes—usually—twice to three times as long to produce a decalcomania as it does to make an ordinary lithograph. But, the application time of a decalcomania is far less than that required with hand painting. Consider, for instance, the problem of tying up a ten-ton truck or a store's windows for the several days required for a painting job, as compared with the few hours requisite when decals are applied. Thus any process, even approaching decals in durability and beauty, involves far more time and expense in application whereas less costly processes offer compensatingly less in effect.

One of the longest exploited fields and the one most thoroughly dominated by decalcomania is that of window and door display. Here, for generations, large advertisers have captured valuable permanent display billboards by the use of so-called "cooperative" decalcomanias. Perhaps the most familiar of all are those used by Ex-Lax and Coca-Cola but hundreds of firms, in almost every field, use this advertising medium. The decals here are of three types. The central figures feature the trademark, slogan or package of the sponsor. Additional but subordinate side panels feature the services or products available in the store, while a third class of panels are merely decorative and serve to fill the spaces between the other two kinds to form a continuous window valance. It is through the use of these decorative panels—so designed that they may be cut and used in any desired length—that the decal valance is adjusted to the varying sizes of store windows.

For eye-level position on doors or windows, smaller signs are made, usually featuring only the one product or line of the sign's sponsor. Although, even here, there seems to be a growing tendency towards the "cooperative" decal which either features other items sold in the store or carries some "good-will" slogan such as, "Thank you—call again." Another type is made with two faces, one to be seen through the glass of a door and the other seen from inside. Here the cooperative message is usually printed on the inner face and the sponsored advertising on the outer, although manufacturers often use the inner face as a purchase reminder for staple items.

In recent years, to a growing extent, the decalcomania has been moving *inside* the store where it is used on walls, counters and other fixtures to identify various departments—usually on a "cooperative" basis. The use of decal decorations on permanent and semi-permanent displays has likewise shown some growth, although here competition is keen from such other processes as printing, lithography, silk screening, die-stamping and embossing.

A more recent development has been that of applying small decals to packages as labels. Here advantage is usually taken of the transparency of the lacquer backing attainable in a decal, permitting the application of delicate lettering—in multi-color effects—without obscuring the color of the package or product below. The product shows through the label as well as the glass. There is also a growing application for containers designed for long and heavy use or those in which the spilling of the contents might damage an ordinary label or stain the paper on which it is printed.

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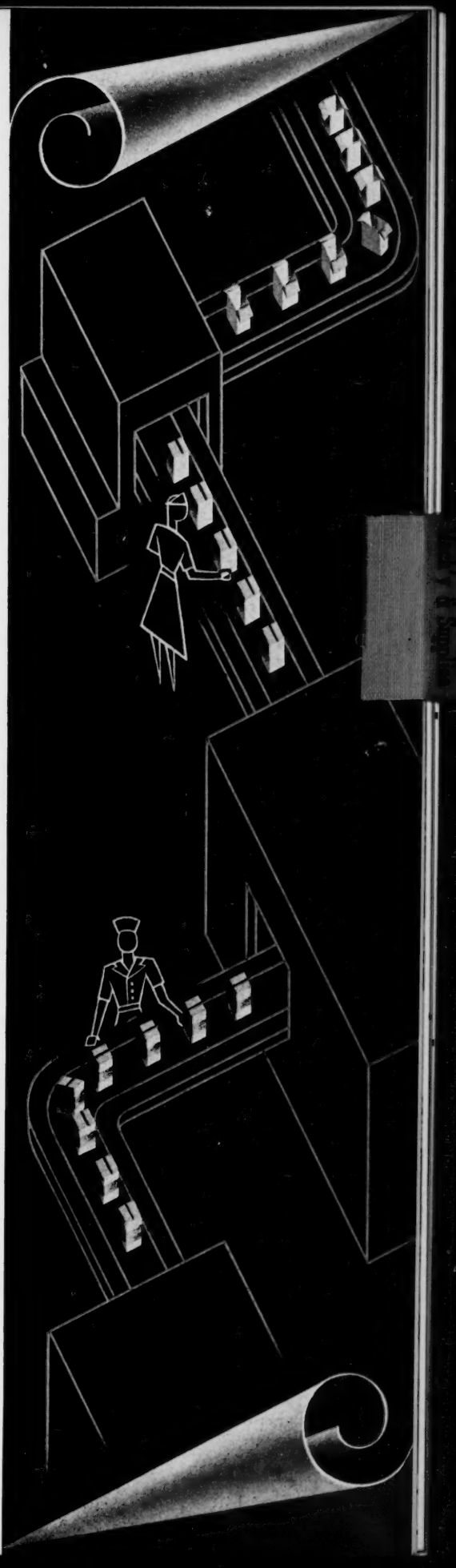
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MACHINERY AND SUPPLIES

SECTION TEN

Pages 321 to 420



ARRANGEMENT OF EQUIPMENT
PACKAGE CONVEYING EQUIPMENT
WEIGHING AND FILLING DRY PRODUCTS
CHECK-WEIGHING SCALES
BOTTLE CLEANING EQUIPMENT
FILLING LIQUIDS AND PASTES
CAPPING AND SEALING EQUIPMENT
LABELING MACHINES AND DEVICES
AUTOMATIC (LOOSE) WRAPPING EQUIPMENT
SEMI-AUTOMATIC WRAPPING EQUIPMENT
TIGHT-WRAPPING EQUIPMENT
CARTON LOADING AND CLOSING EQUIPMENT
COLLAPSIBLE TUBE FILLING
BAG FILLING AND SEALING
BOX AND BAG STAPLING EQUIPMENT
CASE PACKING AND SEALING MACHINERY
SELECTION AND SPECIFICATION OF ADHESIVES
FOLDING BOXMAKING MACHINERY
SET-UP BOXMAKING MACHINERY
FIBRE CAN MAKING MACHINERY

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Arrangement of Equipment

The ease, speed, and economies of modern packaging methods are largely influenced by the proper placement of equipment in the packaging plant. They represent a careful synchronization between the finished products, ready to be packed, a wide variety of materials used in the packaging operations, and the available equipment—all working together so that there may be a natural and progressive flow of products from the very first manufacturing operations to the final shipping.

With the wide variations that exist, such as space available, the physical nature of the product, kinds, sizes and shapes of containers, and fluctuations in quantities, it is obviously impossible to lay down set rules which will apply in all cases. Packaging operations in one plant, for example, may be strictly confined to the packaging of a single product, such as soap flakes, in a standard size unit, utilizing a folding carton, or they may include the complications of the distiller who distributes his products in twenty or more states, each of which has its own requirements as to special labeling or packaging, which must be rigidly adhered to in order to avoid severe penalties or revocation of his operating license, involving over a hundred trade brands, packed in various sizes, in almost four hundred different individual packages, and requiring the efficient and speedy handling of orders for as many as eight thousand units in a single day's production.

Each machine set-up is bound to have its own peculiarities and specific difficulties which, while largely overcome by the manufacturer of the machinery before it is shipped to the customer, does not free the plant owner from responsibility in the location of the machines, or paying attention to matters of detail. In general there must be a scientific orderliness about the line up of the packaging machinery, all equipment being placed to produce maximum performance, under the particular and peculiar conditions in which it is used.

Layout Determines Operating Methods

Having determined upon the actual packaging method to be used—whether it shall be entirely automatic or a combination of mechanical and manual operations—it is of the utmost importance to place the equipment advantageously in the plant, with particular attention paid to the product supply as well as the shipping department. Customary practice is to avoid as far as possible having all manufacturing, packaging and shipping operations on a single floor, it being found more economical and advantageous to segregate manufacturing operations to one floor, packaging to another and shipping to another, so that advantage may be taken of gravity flow production.

Most manufacturers have found that straight line production is the fastest, simplest, and most satisfactory in packaging operations. However, when space is not available, it is entirely possible to group the equipment in progressive stages, so that by means of conveying equipment, the packaging line is kept efficiently moving in one general direction. Obviously if part of the packaging work is done manually it is essential to provide adequate room in which the operators may work; whereas with fully automatic operations, floor space is conserved, it only being necessary to provide enough space to permit the regular inspection and adjustment of the machines whenever required.

Permanent vs. Portable Machinery

While most packaging machinery is permanently located there are cases where it is necessary to provide for versatility and portability. Particularly is this true with manufacturers who vary their operations with the seasons, making and packaging one product during the cold months with a decidedly different one in the summer months. In this case it necessitates having equipment which is portable, so that it is possible to set up a temporary filling, labeling, or wrapping line at any convenient point, avoiding extra handling, assuring quantity production, and maintaining a well-trained group of operators, shifted from one job to another.

Floor areas and, to a considerable degree, wall space, should be efficiently utilized in the placement of the package production units as well as the conveying and motivating equipment, although in the case of the latter—particularly with modern machines—integral motors rather than belt drives are supplied.

The storage of materials and supplies used in the various packaging operations, which formerly—under low-speed operating conditions—was of slight importance, merits careful consideration today. Cans, bottles, and other types of pre-formed containers are usually supplied direct from main storage points, being carried on individual conveyors or those which serve the dual purpose of bringing such supplies to the assembly units and removing the completed packages. In either case it is necessary to make due allowance for such conveying systems in the planning of space and placement, obviating wherever possible any unnecessary travel or inefficient use of power.

In brief, the rules which apply in any efficient manufacturing plant should be followed in the placement of packaging equipment. On the pages following are shown several typical floor plans, with the dimensions given in each instance.

Many manufacturers permit visitors to study the place-

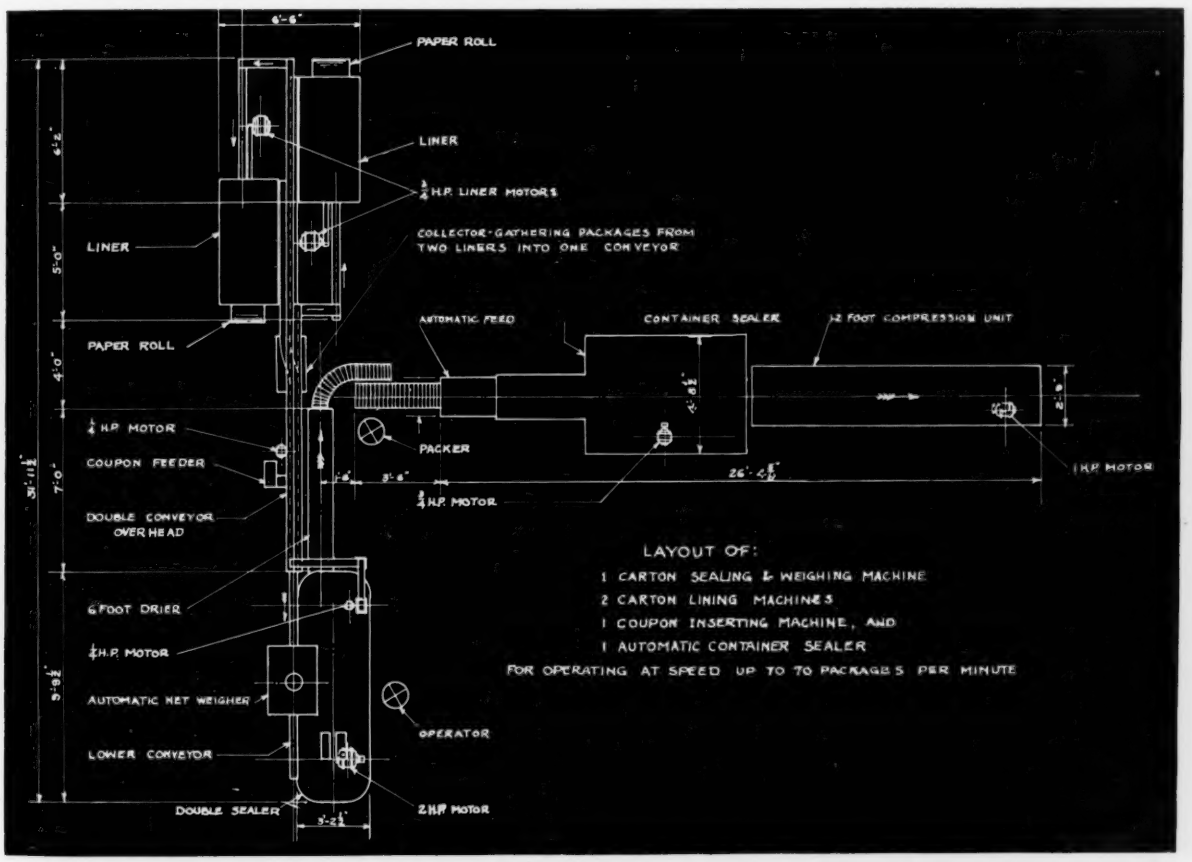
ment of packaging equipment in their plants. Likewise the facilities of engineering services of the various machine manufacturers can be of inestimable help in planning the placement so that there will be no delays or uncalled-for extra handling, and so that efficient production may be maintained to full capacity.

A new factor affecting plant layout in recent years to a greater degree and in more and more plants has been that introduced by the desire to accommodate visitors as a form of advertising for plant and product. The presence of untrained people, children, etc., in a plant for which proper provision for their circulation has not been made would involve many hazards. Hence, if visitors are to be accepted, it is wise to plan in advance for them, to keep routes through the plant available and clear and to segregate these routes as much as possible from transportation, trucking and working areas.

Plant Layout Checking Points

Almost innumerable factors may affect the selection of machinery or the relationship between various machines and between machines and other elements in the plant. Since advance consideration of these factors can frequently avoid much difficulty, delay and expense, it is advisable to check every angle carefully before making any commitments as to machinery installation or plant layout. The following check list is based upon a compilation originally made by Clinton E. Kafka with additions suggested by various machinery manufacturers and production managers.

1. The size of door or opening into building through which the machinery must be moved.
2. The size of the largest available elevator and its maximum load.
3. The load capacity of floors and passageways through which equipment must be moved.
4. The load capacity of the floor at point of installation.
5. Location of obstructions and utilities adjacent to point of installation, i.e., sketches to show trucking aisles, sewer and drain pipes, sprinkler pipes, conduits,



Plan of automatic line consisting of carton sealing and weighing units, lining machines, coupon inserting machine and shipping container sealer. Two operators—other than those required to furnish material—are needed, and up to 70 packages per minute may be produced. By a series of conveyors the formed cartons are fed to the lining machines, thence to the filling unit and, before final sealing, a coupon is inserted in each package. This arrangement permits economical use of floor space. In this arrangement adequate provision is made for the transportation and constant supply of all materials to the points where they are utilized. It is to be noted that each unit is driven by an individual motor, thus making it possible to shut off one without affecting the others. Courtesy of J. L. Ferguson Co.

Shown above in floor and elevation plans is a complete packaging line which includes an automatic carton filling and sealing machine in combination with an automatic tight-wrapping machine. This line would automatically feed the cartons from a supply, bottom seal them and fill them with the desired amount of material, filling through special adjustable measuring flasks arranged in a turret mechanism, particularly suited for free flowing products such as salt, sugar, soap powders, etc. After filling, the cartons are automatically top sealed and carried on a conveyor into the tight-wrapping machine where they are automatically tight-wrapped with the printed label and discharged ready for packing in the shipping containers.

If a regular printed carton is used and not tight-wrapped then the same carton filling and sealing machine would be used without the tight-wrapping machine. This complete line has a production up to 60 to 70 complete packages per minute. The machines are made in various styles and sizes and are changeable or adjustable within certain limits. This drawing has been furnished through the courtesy of Stokes & Smith Company.

As may be seen, this plan assumes that ample room—an overall length of 51 ft.—is permitted. However, if less space in one direction is desired, it is possible to regroup similar equipment through a rearrangement of the conveying units. There are, of course, certain advantages to be gained in longer lines of travel, particularly between units which perform sealing or gluing operations and where a longer time for drying is found to be actually advisable.

It should also be pointed out that packaging equipment should be placed advantageously in the plant, with relation to the product supply as well as to the shipping department. Customary practice, when all operations are not confined to one floor, is to segregate packaging on one floor situated between the products and shipping departments so that advantage may be taken of gravity flow production rather than to employ elevating equipment.

With very few exceptions, users of packaging equipment are not unwilling to permit visitors in their plants for the purpose of studying the placement of equipment. In addition to this source of information, the prospective user can always consult with his machinery manufacturers.

air conditioning ducts, important fixtures and other immovable structures.

6. Type of floor and ceiling construction, i.e., data governing method of mounting and fastening machine into position.

7. Nature of provision made for vibration caused by machine.

8. Nature of provision to be made to permit machine to withstand other vibration present at point of installation.

9. Under what conditions will the machine be operated: warm, hot, cold, wet, moist, dry, dusty, clean, quiet, noisy, sticky, etc.?

10. Electrical current available.

11. Local safety law requirements and factory's own safety requirements.

12. Local building and factory laws in so far as they relate to movement of machinery into plant, installation and mounting.

13. Local trade union restrictions, where these exist, regarding trucking machinery, rigging, installing machine and installing accessory plumbing, heating, wiring and similar utilities.

14. Union restrictions relating to work of machinery maker's service men during installation, during training period, during test period or at later dates.

15. Number and size of accessory changeover parts and provision for handling these in the plant.

16. Requirements for special guards or covers to conform with general plant appearance.

17. Limitations on hours of work of installation men, i.e., can they work while plant is operating, can they work at night, will they retard other production, etc.?

18. Space available for uncrating machinery.

19. Availability of additional laborers as required by service men and categories or trades of same. Labor helps available, i.e., lifting machines, jacks, etc.

20. Air pressure requirements.

21. Ceiling heights, hopper heights, etc.

Relations to Adjacent Machines

22. What other machinery will connect up with the installation in question?

23. What method will be used to convey or transfer materials to and from this installation?

24. Will such conveying devices be a part of other machines?

25. Are these machines now installed—to be installed at the same time—to be installed later?

26. What method will be used for supplying materials or conveying supplies to the machine, i.e., particular note should be made of means of conveying and storing an adequate quantity of accessory supplies such as labels, cartons, wraps, etc., adjacent to points of use.

27. Remote controls affecting particular installation or entire line of which machine is a part.

Product Limitations

28. Peculiarities of the product, i.e., variations in size or shape, density, consistency, viscosity, etc.

29. Peculiarities of the package, i.e., variations in package size that may be anticipated. Both outer size and inside volume should be considered.

30. Seasonal peculiarities affecting the above.

31. Varieties of ingredients to be handled.

32. Special requirements as to metals or other materials coming in contact with the materials which are being packaged.

33. Static or similar material handling difficulties anticipated.

34. Provision for test run in machinery manufacturer's plant using actual samples of package materials and supplies which will be later utilized in conjunction with the installation.

Operating Conditions

35. Make and type of motor, starter and switch required or preferred (if furnished with machine).

36. Location of all machine controls whenever position is optional.

37. Lubricating requirements and system required.

38. Nature of each changeover contemplated from product to product or package size to package size.

39. Frequency of changeover from one product to another or one size package to another.

40. Number of operators required—under various operating conditions as contemplated.

41. Training of operators required. What degree of training is necessary? How long will such training take? Who will train them?

42. Location and provision for seating of operators.

43. Color and kind of paint necessary to match general paint schemes and to withstand spilling and cleaning operations.

44. Requirements for special plating or special treatment of metal parts.

45. Provision for cleaning machines, i.e., supply machinery manufacturer with data as to special requirements for cleaning involved in reaction to a product and machine parts, hardening or gumming of products, etc.

46. Climatic conditions in locality of installation.

Time Factors

47. Desired installation date.

48. Time required to complete installation.

49. Time required to complete accessory installations and utility work necessary prior to placing machine on floor.

50. Time allowed for tune-up.

51. Time allowed for training of operators and maintenance workers.

52. Date on which production must start.

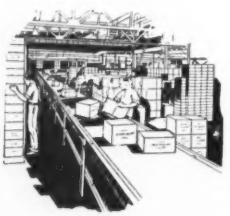
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Package Conveying Equipment

by W. J. RAMSEY*

When the application of materials handling equipment is being considered, whether the commodity to be conveyed is in cartons, boxes, glass or metal containers, or what not, it should be remembered that there is one definite type of conveyor, or combination of types, that will best serve in each particular case. It may be belt or roller conveyors, it may be pallet or live roller conveyors. In fact, it may be one or more of a number of different types set up in combination to do a certain job well. The conveyors applied depend entirely upon the job to be done, the conditions to be met.

Frequently arising are problems in handling which cannot be practically solved by applying the more common floor types of conveyors. It may be that floor space cannot be sacrificed to accommodate equipment of this type, or the commodity to be handled may be of such size and nature that it cannot be practically conveyed on floor units. Any number of such situations arise and are usually met with the application of chain trolley conveyors.



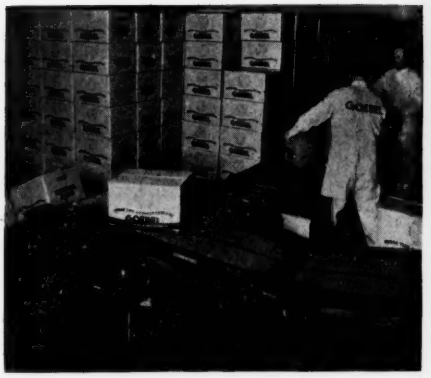
Belt Conveyors

The belt conveyor is perhaps the most versatile type, capable of innumerable applications. It can be level, inclined or declined; it can be reversible; it can be set at working height on the floor, or be suspended from the ceiling, out of the way of other activities; it can be stationary or portable. In fact, a system incorporating belt conveyors, if well-engineered, can be the most flexible handling set-up available, simply because conveyors of this type offer a flexibility typical only of them.

* Mathews Conveyer Co.



1. Deflecting arm switching cases from roller to belt conveyor. Photo courtesy Mathews Conveyer Co.



2. A snubbing device used to keep an inclined belt taut. Photo courtesy Mathews Conveyer Co.

Rollers are the most commonly applied method of supporting the belt and the load. Usually tread rollers are complete with ball bearings, although friction bearings can be applied. It is poor judgment and certainly poor economy to support a belt conveyor with cheap, inadequate tread rollers. In doing this, one eliminates a strong point in favor of the belt conveyor—its dependability. In cases where the conveyor is short and the load fairly light, a solid supporting surface, known as a slider bed, is often used under the belt in place of tread rollers. It may be constructed either of wood or sheet metal. There is practically no vibration where slider beds areapplied. This construction affords the smoothest possible means of conveying.

Belt conveyor drives are quite interesting, but a description of them requires considerable detail. We will merely note the tandem drive and the conventional head-end drive are widely applied.

When a belt conveyor must be level and inclined, a two- or three-pulley arrangement, known as a snubbing device, is applied.

This device, located at the point of inclination, changes the belt from a level to an inclined plane. These snub pulleys are sometimes conveyor rollers, anti-friction bearing equipped. In cases where cartons or boxes must be transferred from gravity roller to an inclined belt conveyor, such a transfer is not possible if the angle of inclination exceeds approximately 12 deg. The cartons or cases would slide at the point of inclination. This problem is easily solved, however, by the application of a straight section of belt conveyor to receive the material from the gravity line and then inclining the conveyor to the desired degree by using a three-pulley snubbing device at the desired point of inclination.

Many types of belts are available for specific kinds of service. In the food industries, for example, where

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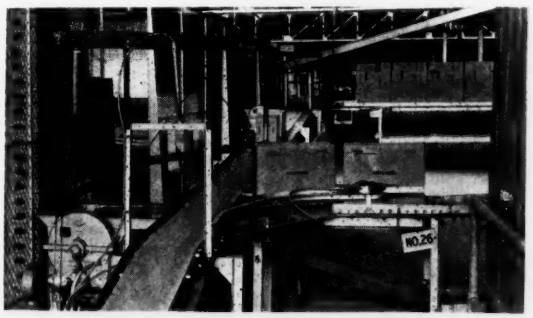


3. Belt conveyors used to bring material past operators at work tables. Photo Mathews Conveyer Co.

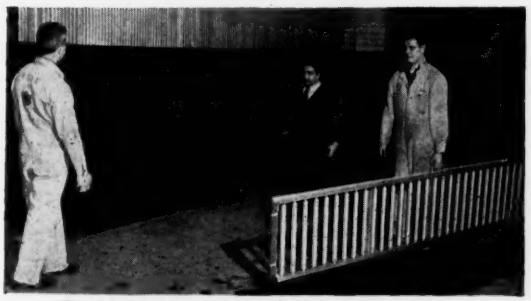
sanitary conditions must prevail, belts having a rubber-covered top and bottom surface are used. Where steep inclines and declines exist, belts having a rough top surface are quite generally applied. Belts available are stitched canvas, solid woven, rubber, rubber-covered, duck, steel mat, wire mesh and heat-resisting types.

An application of belt conveyors which merits special attention is assembly units. A slowly moving belt conveyor set at a working height approximately 30 in. above the floor, affords an ideal assembly conveyor for rapid labeling, stamping and inspecting operations. When applied in this manner, belt conveyors greatly speed up operations and aid continuous flow methods, production is increased and confusion is minimized.

In applying belt conveyors, it is often desirable to deflect material from the conveyor at a predetermined point. There are several types of deflectors available. Some are operated by hand, others by a cable attachment, remotely controlled; some are stationary, others are portable. A very common design is that which has the deflector mounted on a shaft, which shaft operates on anti-friction bearings. A deflector of this type may be locked into place and quickly swung out of deflection position when that is desired.



4. Deflecting cases from roller to belt conveyor. Photo courtesy The Alvey-Ferguson Co.



5. Newly developed light weight portable conveyor. Ten-foot section weighs 70 lbs. Photo courtesy of the Jervis B. Webb Co.

Belt conveyors have a certain value from the viewpoint of a production manager. Consider an operation in which a belt conveyor carrying a line of empty packages serves a packing table. The packages are delivered at a predetermined rate. The operator is required to fill each package and replace it on the conveyor which carries it to the wrapping or sealing machine. If the speed of the belt has been set at a rate best suited to efficient operations, then it will continually deliver empty packages to the operator at a high rate of efficiency.



Roller Conveyors

Roller conveyors are the most commonly applied and the most economical type of modern materials handling equipment. At the time of the inception of the modern power-driven conveyor units, roller conveyors of the gravity type already had a long service record in many branches of industry. Today, as then, the gravity conveyor application is a very common and satisfactory one.

The widespread use of roller conveyors can be attributed to several factors which become obvious when one compares conveyors of this type with those of other types. For example: the comparatively low initial cost and upkeep, the great variety of roller sizes, bearing designs and frame constructions available and the fact that roller conveyors are usually made up in ten-foot sections, which makes them easy to move about and simple to erect.

Seamless steel tubing is used in the modern conveyor roller and the range of sizes applied runs from one inch to twelve inches in outside diameter. There are approximately 25 different sizes available, all falling within the one-inch to twelve-inch range. This larger number of available standard sizes offers: (1) light duty conveyors for handling such articles as cartons of tobacco, confectionery and a host of other light commodities; (2) standard duty roller conveyor, for handling articles of medium weight, such as cases and cartons of bottled beverages, loaded cans and kegs, foundry molds, light machine parts and other articles of similar weight and character; (3) heavy duty roller conveyor, with the capacity for heavy castings, coils of strip steel, sheet packs and similar heavy and bulky materials.

With the increasing demand for roller conveyors in many industries, there came an accompanying demand for ball bearings of special designs. As a chain is no stronger than its weakest link, neither is a conveyor any

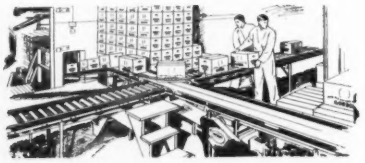


6. Roller conveyors used to carry cases past curves in package warehouse. Photo courtesy Mathews Conveyer Co.

better than the bearings within its rollers. Dairies, for instance, realized the need for hermetically sealed rollers and bearings to protect the equipment against acid, steam and moisture. Friction bearings of bronze or wood are available for certain applications. In fact, there is a certain suitable roller and bearing for every practical purpose.

While it may seem to be a feature of secondary importance to the subject at hand, the axles applied in conveyor rollers are really of considerable importance and for this reason: the inner ball race of the bearing must be positively locked with the axle, so that no rotation between these two parts is possible. A hexagon-shaped axle will provide this positive locking, as will a round axle, if the latter is equipped with gear teeth on both inner ball race and axle. In the latter case, these gear teeth will mesh and lock the two parts securely.

Curves of any specified degree can be easily negotiated by roller conveyor. The rollers used in these situations are tapered toward the inside of the curve.



Live Roller Conveyors

This design differs from belt conveyors and roller conveyors in that the means of carrying the load is not an endless belt but, rather, individual rollers driven by either a belt snubbed against the underside or by chain and sprockets, or gears. Live roller conveyors are adaptable to rough, hard service, the seamless steel rollers will stand shock loading, abrasion and rough usage which would otherwise be detrimental to a belt surface over a period of time. A feature of the belt-driven type is the possibility of handling containers intermittently without stopping the conveyor. The rollers remain stationary beneath the containers while held against a stop. When the stop is released, the containers move on to the next work station or point of processing.



7. Live roller installation. Photo courtesy of the Mathews Conveyer Co.

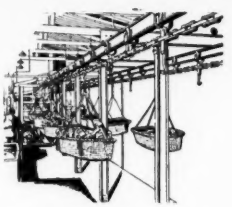
In the chain or gear-driven types, the roller action is positive and surface speeds as high as 500 F.P.M. and more are employed.

Trolley Conveyors

The trolley conveyor is not the most flexible of the various types of handling equipment and neither is it the most universal in application. However, it affords a great conservation of floor space and serves processing machinery and other operations just as efficiently as the more common floor type units. It is especially adaptable to mass production practices, and may be used as a mobile storage area which provides a steady supply of material to machine operators, assemblers and packers. Transverse bends permit the trolley conveyor to lower to working height at predetermined points in the plant, so that the hooks or trays carrying the product may be loaded and unloaded conveniently. Ample head room is secured throughout the working areas and aisle-ways without hindering plant operations.



8. Live roller conveyor, rollers actuated by belt motion on underside. Photo courtesy Standard Conveyor Co.

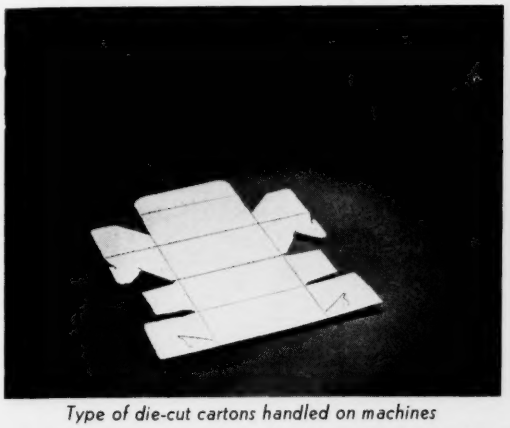


The trolley conveyor is dependable, simple in mechanical operation and rarely a source of trouble. The track used is a common eye-beam, supported from the ceiling or from the floor, whichever type support best applies in the case being considered. The trolley wheels used are of the ball bearing type. They may be grease-packed or pressure lubricated; plain or flanged; of pressed steel or cast iron. When high temperatures are encountered in

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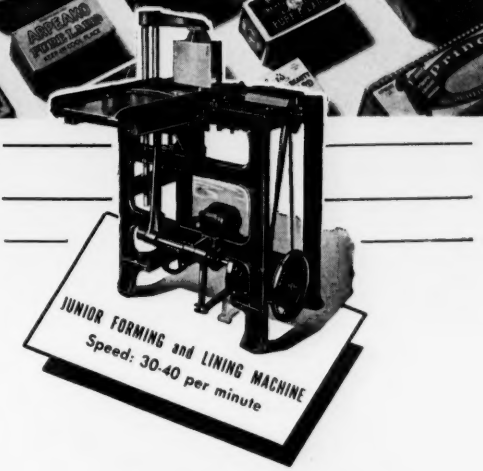
TOPS!

IN YOUR CARTON PACKAGING DEPARTMENT



Type of die-cut cartons handled on machines



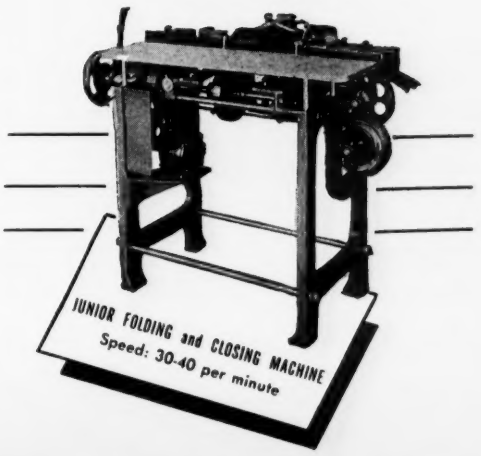


IF YOU are using cartons, similar in type to the above, or plan to do so, Peters can furnish you with equipment to set up and close these cartons most inexpensively.

The JUNIOR Model Machines shown can be made adjustable to handle a wide range of sizes. For a production of 50–60 per minute, SENIOR Model Machines are used economically. In fact, equipment can be furnished to handle requirements ranging from 10–60 cartons per minute.

It is only necessary to send a sample of each size carton you wish to handle on machines. With this information, we can recommend the most economical and efficient equipment to set up and close your specific sizes.

You will find your cost per package considerably reduced when using Peters Machines, so investigate today. Complete information sent without obligation.



OTHER MACHINES AVAILABLE:
Cellophane Bag Making Machine
Cellophane Sheeting and Stacking Machine

PETERS MACHINERY CO.

4700 Ravenswood Avenue, Chicago, Illinois

Canadian Representative: Delamere & Williams, Ltd., W. Toronto, Canada

ovens, Nitralloy bearings incorporating a steel labyrinth closure are most practical.

The smooth negotiation of turns and corners is important if a trolley conveyor is to operate successfully. Roller turns or wheel turns are both suitable in this regard. The roller turn consists of rollers mounted with through shafts set vertically in a frame. These are made up in standard 45 deg. sections and can be combined to give any degree required. This type of turn requires no regular lubrication and is low in initial cost and upkeep.



9. Overhead trolley installation. Photo courtesy The Lamson Co.

It provides uniform chain tension throughout the conveyor. The wheel or sprocket turn consists of an ordinary traction wheel or sprocket to negotiate the turn and provide chain tension.

The fact that so many different types of carrying devices can be applied, adds to the flexibility of conveyors of this type. Hooks and trays have been developed for handling furniture, automobile tires, coils of wire, cigarettes, radiator shells, machine parts, electrical appliances and a score of other products. Special hooks have been developed for conveying in acids and other solutions. In fact, the variety of carrying devices available enables us to consider most any load a trolley load.

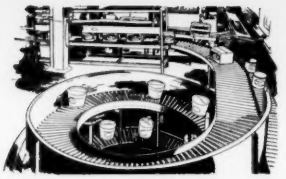
10. Ball bearing trolley wheel and hanger. Photo courtesy Mathews Conveyer Co.



Roller Spiral Conveyors

Roller spirals consist of a number of 90-deg. curved sections of roller conveyor set in the form of a spiral and mounted in a structural steel framework.

As a means of lowering merchandise smoothly and safely from floor to floor, the roller spiral conveyor compares favorably with sheet metal spirals and is widely

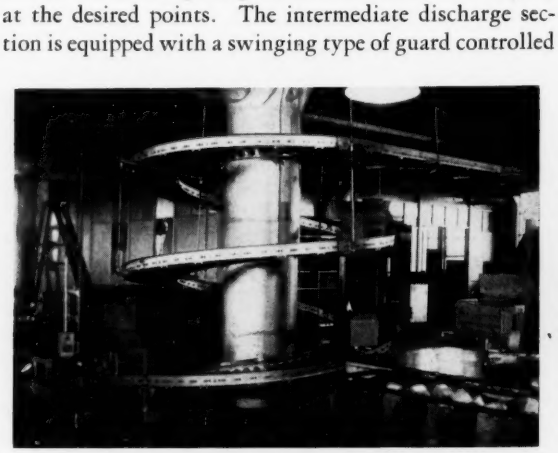


applied. In fact, the roller spiral has advantages to offer which are peculiar to it alone. It is positive and smooth in action and can be used for temporary storage when that is necessary. Since the descent is quite slow and very smooth, cartons, boxes, kegs and containers of many kinds can be handled on the spiral uncovered, without danger of damage or upsetting.

The roller spiral conveyor is made in three standard types, namely: (a) the single roller two-rail type with standard straight rollers; (b) the single roller two-rail type with standard tapered rollers; (c) the double roller three-rail type with standard straight rollers. For best results, the double roller construction is recommended, for it offers greater strength since it places a greater number of bearings under the load and reduces outside guard rail friction to a minimum. This latter feature lowers the possibility of stoppage at inaccessible points of the spiral. The single roller types are recommended only when small sized and light items are to be conveyed.

In many cases where a roller spiral passes through and serves several floors, it is desirable to put materials on the spiral or remove them from it at intermediate floors. To accomplish this, loops are used at these specific floors. In other words, at the point where commodities are to be taken from the conveyor, two straight sections and half a turn of roller conveyor are inserted in place of one-half turn of spiral. This forms a loop extending out from the spiral and affords the opportunity of the straight sections being used as switches to additional lines of roller conveyor. These switches can be so arranged that the commodities will travel, without interference, on down through the floor without stopping.

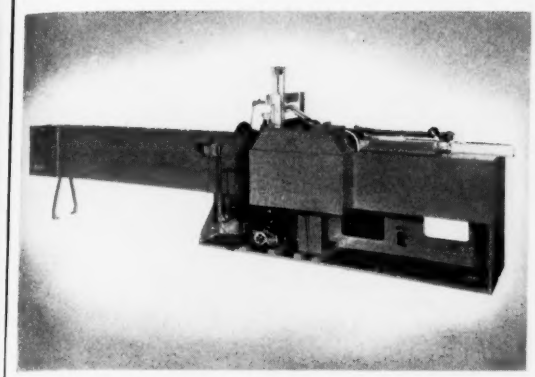
Where the lack of space will not permit the use of the loop arrangement, the same results can be obtained, although not so satisfactorily, by means of intermediate receive and discharge frog sections inserted into the spiral at the desired points. The intermediate discharge section is equipped with a swinging type of guard controlled



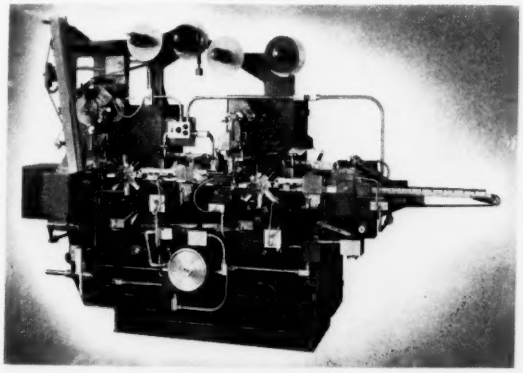
11. Spiral roller conveyor built around a pillar. Photo courtesy The Lamson Co.

REDINGTON PACKAGING MACHINES

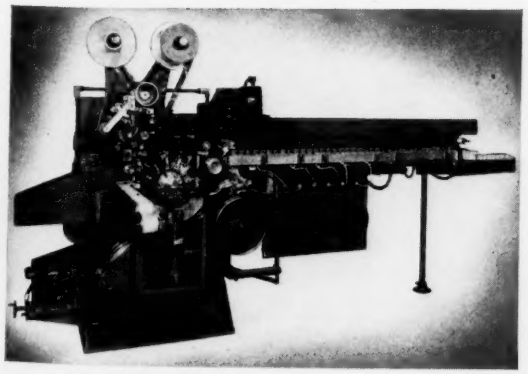
for practically every type of product from cigarettes to codfish . . . drugs to spark plugs



A Champion Spark Plug is placed in each pocket of the intake conveyor of this Redington continuous loading cartoning machine. Cartons, stacked in a magazine, are fed by the machine, and expanded. Plugs are then inserted in each carton and the tuck end flaps are then closed.



The Zip-Top Pack or double Cellophane wrap of Old Gold cigarettes is practical because of this Redington wrapping machine. Easy opening tape is arranged so that both wraps can be opened faster than a single wrap. Speed: 150 packs a minute.



This special Redington double wraps more than 200 bars of Crystal White laundry soap a minute! Both the inside wrap and the outside laminated wax wrap are cut from a roll. Printed design is registered. The outside wrap is heat-sealed by the pin method.

CARTONING MACHINES

● *Consult Redington* for automatic cartoning of practically any solid item. Machines are available for inserting bottles, jars, collapsible tubes, razor blades, candy coated gum, oleomargarine, macaroni, soap and almost any other solid item or container in glued-end or tuck-end cartons. Redington Cartoning Machines can be equipped with circular mechanism for automatically handling printed advertising matter —means for printing on cartons— means for code stamping carton— mechanism for other features such as placing a corrugated protector around bottles.

WRAPPING and CELLOPHANE WRAPPING

● *Consult Redington* for high speed wrapping machines for handling products in Cellophane, Sylphrap, wax or glassine paper and other wrapping materials. Redington Wrapping Machines can be equipped with mechanism for applying "Easy Opening Tape"—with photo-electric cell mechanism for controlling cut-off of printed design—with special mechanism for handling government stamps for tobacco packages and with many other special mechanisms. The unit at the left for Old Gold cigarettes is a typical Redington installation.

SPECIAL PACKAGING

● *Consult Redington* for packaging machines that defy classification . . . the unique wrap of Listerine, the double wrap for Crystal White Soap, the distinctive interlocking wrap for tins of Underwood's Deviled Ham, Bayer's tins of Aspirin, Phillips Milk of Magnesia package, Life Saver's, professional and sample envelopes for Bayer's Aspirin and Grove's Laxative Bromo Quinine.

And whether or not we've mentioned the type of package similar to yours, remember, Redington has 42 years of experience to draw upon in solving your problem. Consult us—free of obligation.



F. B. REDINGTON CO. (Established in 1897) 108 So. Sangamon St., CHICAGO, ILL.

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by a hand-operated mechanism. When commodities are to continue down the spiral, the guard rail is set in line with the spiral guards along the periphery of the spiral, but when it is desired to discharge the commodities at the intermediate point, the guard is swung across the path of the spiral, thus deflecting the commodity onto a connecting line of roller conveyor. This arrangement is not applicable to spirals having tapered rollers.

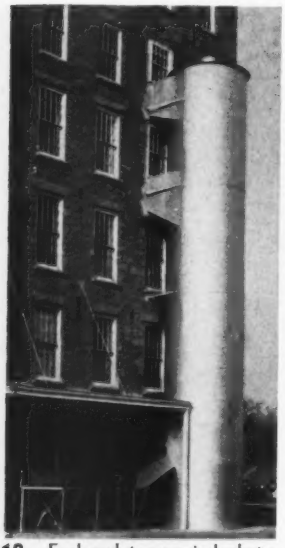
Roller spirals are usually constructed with a single track, but, when necessary, they can be constructed with two or three tracks, one above the other. The only advantage this construction offers is that materials may be received from different locations and kept separate during the descent and discharge.



Sheet Metal Spiral Chutes

The sheet metal spiral chute is without peer when merchandise must be lowered from one floor to another. Utilizing the force due to gravity, it offers a continuous delivery service that requires no power and is always ready for use, having practically an unlimited capacity.

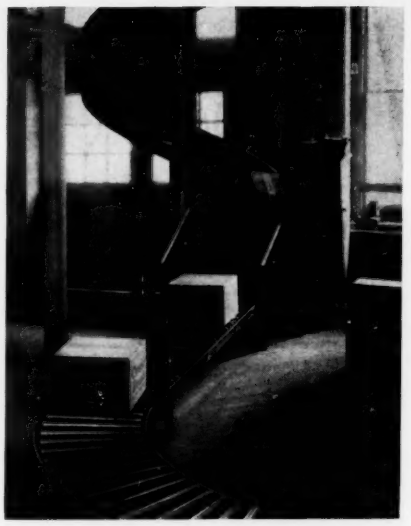
There are several types of spiral chutes, each one useful in its own field of application. The enclosed type of spiral chute is widely applied for handling boxes, bags, bales and even loose materials. It is most desirable in cases where the material being conveyed must be carefully checked by certain individuals assigned to that job. The conveying done on a chute of this type is not visible to the public and those at the receive and discharge ends can be entirely responsible.



12. Enclosed type spiral chute. Photo courtesy of the Mathews Conveyer Co.

Floor openings for spirals of this type are circular, being slightly larger than the enclosure itself. In many cases, enclosed spirals are erected outside a building. In that case, the spiral is usually made of galvanized sheet metal, due to the condensation which is encountered in that construction.

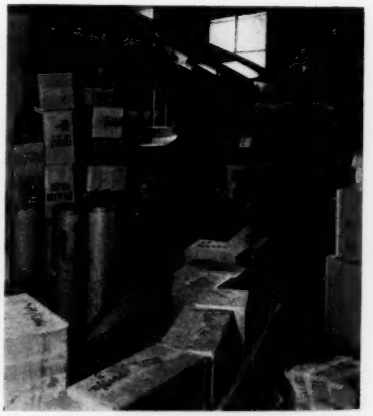
The open standpipe type chute is suitable for installation in closed or open shafts where, for various reasons, an enclosed type chute is not necessary. In existing buildings, old elevator shafts are often used for



13. Open standpipe spiral chute. Photo courtesy of the Mathews Conveyer Co.

installing the spiral. When no shaft-ways are available, it is necessary to cut an opening in the floor large enough to allow the standpipe and blade to pass through, plus sufficient clearance for the maximum size package to be conveyed. The standpipe used with this type of spiral is merely a substantial iron pipe to which the blade is riveted and around which it describes a spiral. The standpipe rests on the lower floor and extends upward the entire length of the spiral.

The open core type of chute is especially adaptable for handling long and narrow articles of bulky classes of merchandise. It is used where the spiral can wind around an existing column or where it passes through floors in locations limited by beams or girders that cannot be conveniently cut or moved. This type of spiral has no enclosure or center standpipe to support the blades. It is supported entirely by means of hanger supports fastened to the ceiling or floor supports and by angle floor plates located at each floor opening.



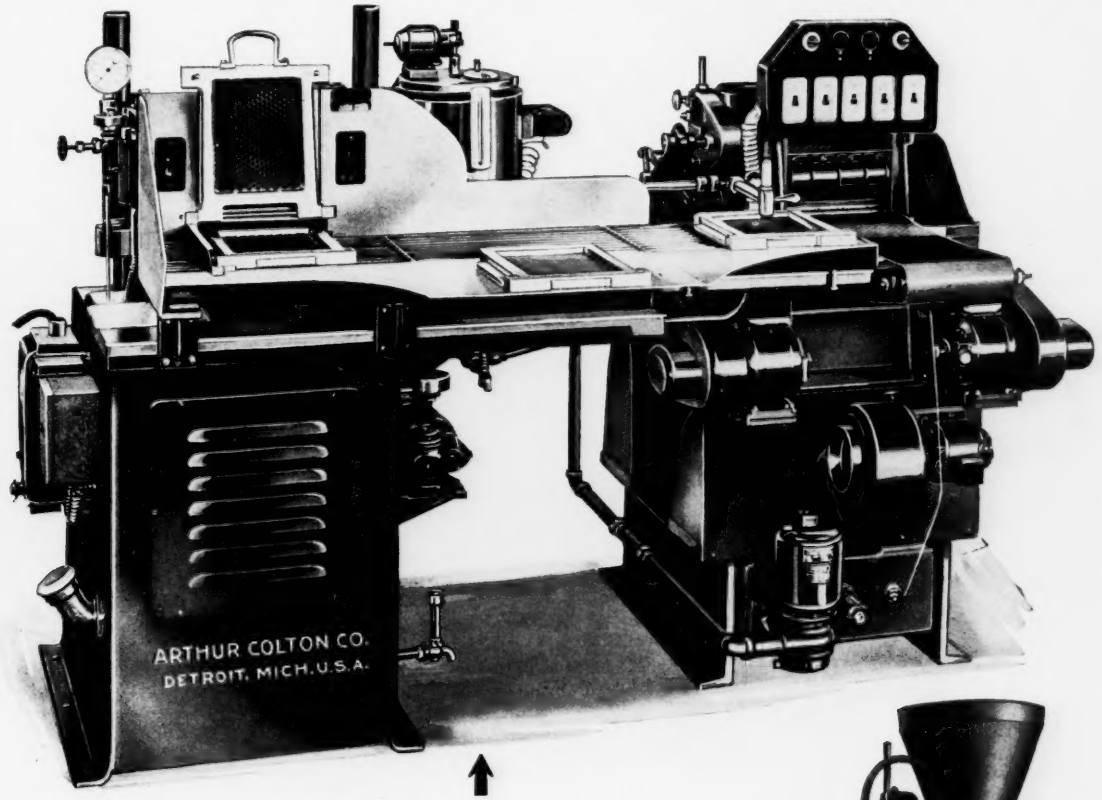
14. Chute supported by ceiling hangers. Photo courtesy Mathews Conveyer Co.

Large and small boxes, such as containers used in wrapping department store merchandise, cartons of all kinds and containers of practically any size and shape can be conveyed on spiral chutes designed especially for handling such containers.

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Presenting The **NEW**

SOFT-FILLED ELASTIC CAPSULE PLANT

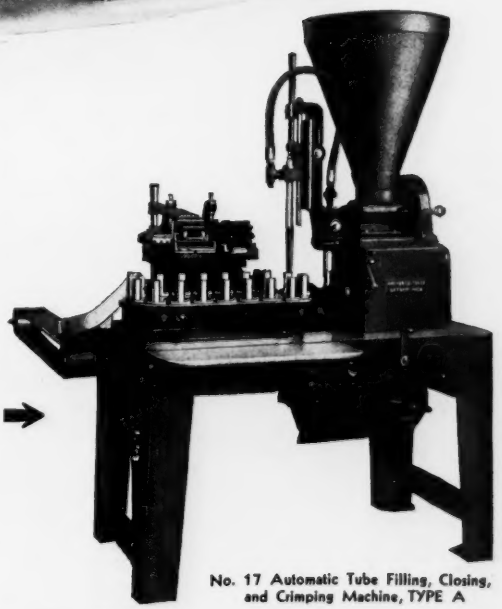


These self-contained new plants make gelatine sheets; deliver them to multi-cavity molds; deposit the required amount of fill; and press the capsules in an automatic cycle. Capacity is three molds per minute—the number of cavities in each varying with the size and shape of the capsules. Write for complete information.

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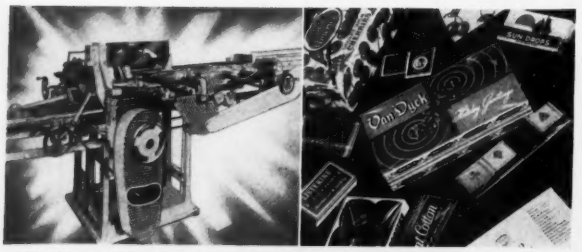


No. 17 Automatic Tube Filling, Closing, and Crimping Machine, TYPE A

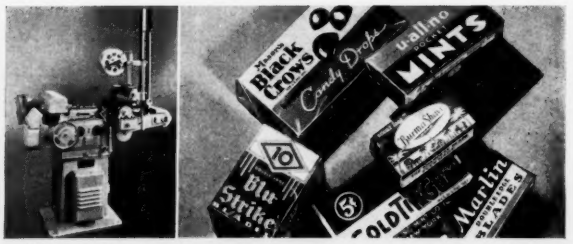
ARTHUR COLTON CO.

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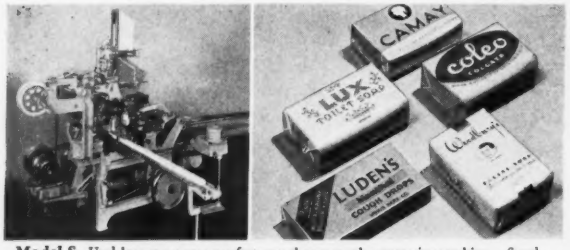
. . . Put your problem up to the



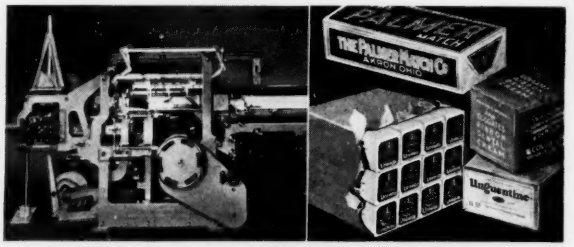
Model FA-Q—Popular carton wrapping machine. Extremely wide size range . . may be adjusted for different sizes *in only 10 minutes*. Uses any type of wrapping material—transparent cellulose, foil, glassine, waxed paper, etc.



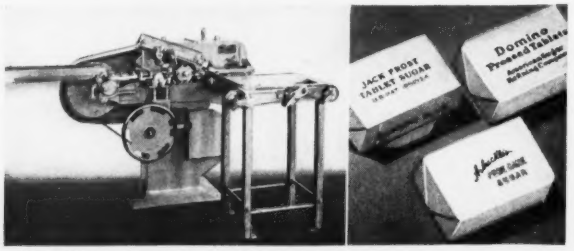
Model CM-2—New high speed machine to wrap comparatively small packages such as cigarettes, razor blades, etc. Speeds up to 400 per minute depending on size and nature of package. Quickly adjustable for various sizes. Uses transparent cellulose.



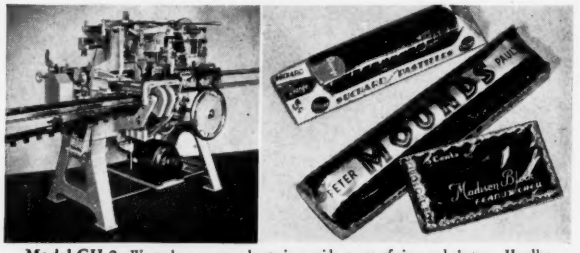
Model S—Used by more soap manufacturers than any other wrapping machine. Speed 150 per minute. Handles many styles of wrapping . . uses any material. Adjustable for different sizes. Inserts cardboard or circular, if desired.



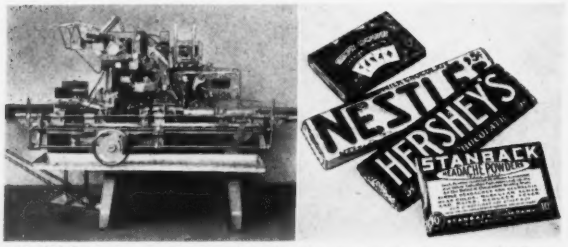
Model F-9—Bundles packages in lots of from 2 to 24, depending on size of the packages. Eliminates expense of packing in costly cardboard boxes. Registers printed panels accurately. Also attaches printed end seals.



Model HY-3—Wraps cut or lump sugar and similar rectangular articles. Handles either paper wrappers, gluing end folds, or waxed paper, heat-sealing seams. Machine may be built for different sizes. Speed 100 per minute.



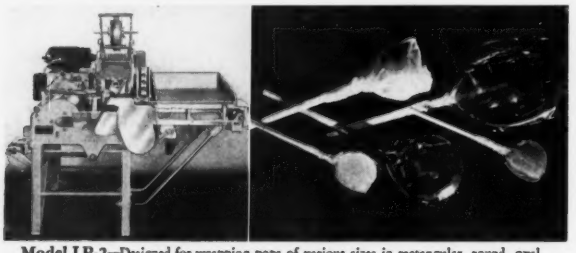
Model GH-2—Wraps bars or open boats in a wide range of sizes and shapes. Handles transparent cellulose, glassine, waxed paper, foil, or plain paper wrappers. Equipped with Electric Eye for accurate registration of printed material fed from a roll.



Model CA-2—Completely automatic machine for wrapping chocolate bars and other products. Handles printed foil, glassine, cellulose and other materials in roll form. Electric Eye locates printing accurately on bar. Adjustable for different sizes.



Model BW—Bread and Cake Wrapping Machine. For bakers producing 2,000 to 3,000 loaves per hour. Adjustable for a wide range of sizes. (Also available, Model BW-2, producing 1,000 to 2,000 loaves per hour.)



Model LP-2—Designed for wrapping pops of various sizes in rectangular, round, oval, pear- or ball-shape. Speed 110-120 per minute. Uses waxed paper, glassine, or transparent cellulose in economical roll form.



Model BH-6—Milk bottle hooding machine. Forms hood from cellulose and sealing tape in roll form. Works directly from production line. High speed of 60 bottles per minute.

XUM

Package Machinery Company

Working with packaged goods manufacturers during the past 26 years, we have taken a leading part in the development of modern packaging methods. Many basic improvements, now common to most wrapping machines, were first introduced in our machines.

From this pioneering policy, we have gained an extensive knowledge of packaging in all its phases . . . wide experience which is at your service, to help you obtain the package best suited to your product from both the sales and economy standpoints.

From our line of 78 different types of wrapping machines, we show here a few of our most widely used models. These machines are modern to the nth degree. Operating at high speeds, they offer large savings in time—cut production costs to a minimum. Most of them are extremely flexible—quickly adjustable for a wide range of sizes and types of products. This means that a manufacturer, formerly unable to afford expensive, multiple equipment, may now use a single machine to wrap his entire line. Moreover, in a large plant, high speed adjustable machines save considerable floor space, as fewer machines are required to do the same amount of work.

Yet, with all their advantages and economies, our machines cost less today than they ever have before.

Ask our nearest office how we can help you.

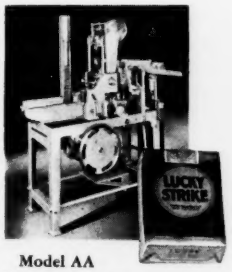
Literature on request

PACKAGE MACHINERY COMPANY, Springfield, Mass.

NEW YORK CHICAGO CLEVELAND LOS ANGELES TORONTO

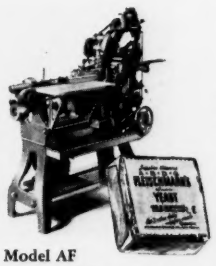
Mexico, D. F., Apartado, 2303 Buenos Aires, Argentina: David H. Orton, Maipu, 231

Peterborough, England: Baker Perkins, Ltd. Melbourne, Australia: Baker Perkins, Pty., Ltd.



Model AA

Wraps packages of cigarettes, razor blades, candy, etc., in transparent cellulose, glassine, waxed paper, etc. Makes exceptionally tight seal for utmost protection. Adjustable for various sizes.



Model AF

Cuts standard ½ oz. yeast cakes and wraps in foil, applying sticker. Makes a firm wrap without distorting cake. Speed 110 per minute.



Model AC

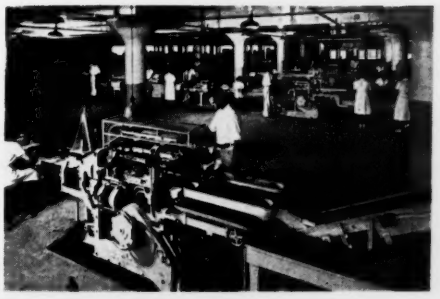
Makes standard 5c chewing gum package, performing all operations. Wraps and bands each stick individually . . . assembles 5 sticks . . . then bands package with printed label. Extremely high speed—600 sticks per minute.



Beech-Nut Packing Co.—
chewing gum wrapping machines



Standard Brands, Inc.—
yeast cake wrapping machines



Miles Laboratories, Inc.—
bundling machines



Tampax, Inc.—
carton wrapping machines



Pusher-Bar Conveyors

In plants of many branches of industry, it is frequently necessary to apply long lines of roller conveyor, some of which are at different elevations than others in the same system. Unless the height at the point of receive is unusually great, these long gravity lines must be regraded and, also, some connecting link must be applied between the lines at different elevations, if there is to be any continuity in the system. Aside from the inclined belt conveyor, the most common unit applied for regrading gravity conveyor lines and for connecting one conveyor line to a higher one, is the inclined pusher-bar conveyor.



15. Inclined pusher-bar conveyors. Photo courtesy Mathews Conveyer Co.

This type of unit, which is essentially a chain conveyor, is comparatively plain in design and is rarely a source of mechanical trouble. It consists mainly of two parallel strands of roller chain, which operate smoothly on run angles. Pusher-bars are mounted at intervals in the chain. They are usually made of pipe and serve to push the load up the incline. The load being conveyed is supported by a heavy sheet metal tread plate, which serves as a slider bed, being of a smooth surface which creates very little friction.

To meet the demands of both heavy and light service, pusher-bar conveyors are built in light and heavy duty types, each type, of course, having its specific application. The light duty units are used where the load involved is comparatively light and does not exceed 25 ft. in length. The heavy duty conveyor is applied where the unit is long or the load involved is comparatively heavy. Both light and heavy duty types of pusher-bar conveyors are to be had in four standard inclinations, as follows: 30 deg., 45 deg., 60 deg. and 90 deg. However, practically any degree of inclination can be applied when necessary for special conditions.

The matter of receive and discharge elevations is important when pusher-bar conveyors are being considered.

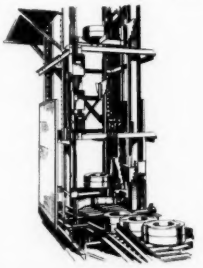


16. Wide roller conveyor receiving cartons from inclined belt conveyor. Also narrower roller canveyors and belt conveyors used for distributing the packages to shipping platform or to storage. Courtesy Standard Conveyor Co.

Neither type, heavy or light, can operate with a receive elevation of less than eight and one-half inches. The minimum discharge elevations vary, however, as follows: light duty—30 deg. and 45 deg., 3 ft.; 60 deg., 4 ft.; 90 deg., 7 ft.; heavy duty—30 deg., 3 ft.; 45 deg., 3 ft. 6 in.; 60 deg., 5 ft. 6 in.; 90 deg., 9 ft. 6 in. The discharge elevation is equal to the sum of the receive elevation and the vertical distance through which the loads are elevated. This vertical distance is designated as the lift.

Inclined pusher-bar conveyors are usually operated at comparatively low speeds and for this reason give a long period of dependable service. The rollers of the chain operate on run angles and the sheet metal tread plate is polished, resulting in a minimum of friction to be overcome. Because of this, very little power is necessary to drive the conveyor.

The driving mechanism used on an inclined pusher-bar conveyor usually consists of a gear-head motor with chain connection to sprocket. Motor and speed reducer combinations are sometimes used and an occasional spur gear set-up is applied, the latter having been the popular type a few years ago, but having been replaced by less complicated and more economical types.



Elevating Conveyors

In every plant where materials are handled from floor to floor, elevating conveyors form an important part of the handling system. The two most widely applied types, the automatic straight lift elevating conveyor and the automatic vertical hoist, are serving industry to excellent advantage. In fact, conveyors of these types comprise the most important part of an inter-floor handling system.

XUM



DESIGNED FOR *Savings*

Wherever packages or bulk materials are handled in an industry such as your's, there is evidence of *Savings* and *Efficiency* that have been created by "Scientifically Planned Conveyors". Alvey-Ferguson Equipment is designed to *serve* and *save* whenever and wherever possible.

Such records as—"118% Increase in Production by a Leading Food Concern"—"68% Savings in a Bottling Plant"—and "Efficiency Increased 40% in One of the Largest Chemical Companies"—testify to the engineering ability and quality manufacture of The Alvey-Ferguson Company.

You can discuss your problems with our engineers without any obligation and at any time. Why not today? Call or wire us collect. The Alvey-Ferguson Co., 50 Disney Street, Cincinnati, Ohio.

P. S. Write for our New Catalog now!

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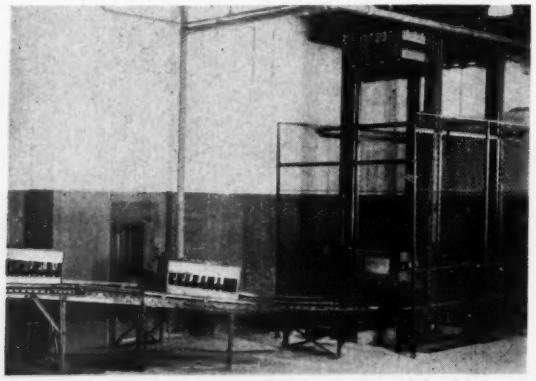
CONVEYING MACHINERY

SCIENTIFICALLY PLANNED *Conveyors*

The straight lift elevating conveyor is especially efficient when used in conjunction with roller conveyors at the receive and discharge points. Materials may be taken from one floor and be discharged at any floor either above or below.

Straight lift elevating conveyors are designed in four standard sizes, each size, of course, intended especially for articles of definite specifications. Kegs, barrels, bales, boxes, cartons and objects of the most irregular contour can be handled on an elevating conveyor of modified standard carriage design. It is not a difficult matter to design a conveyor of this type to handle articles of such unusual size or shape, although standard equipment is not always suitable.

The unloading or discharge station is always located on the descending side of the conveyor. The commodities are placed on the receive stations by means of a special loading device which permits only one commodity on the station at a time. When the articles being handled are

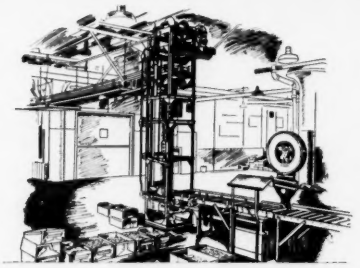


17. Automatic lift conveyor. Photo courtesy of the Mathews Conveyer Co.

rectangular or square in shape, of uniform size and in good condition, the loading operation will be automatic. However, if this is not the case and the containers are not uniform, odd in size, or in poor condition, an attendant may be required to assist in the loading operation. For example, cylindrical-shaped objects or barrels on the bilge require manual loading over suitable skids.

The carriage of the elevating conveyor ascends, raises the commodity from the loading station and carries it over the top of the elevator, releasing it at the discharge station on the opposite side of the conveyor in the course of its descent. The commodities are discharged automatically to lines of roller conveyor when boxed commodities are conveyed and to skids when cylindrical objects or barrels on the bilge are conveyed. The opening and closing of the receive and discharge stations may be controlled by means of hand levers located adjacent to the station, or by means of a cable-controlled system which may be operated from any desired location, usually at the main loading station.

The carriages of the conveyor are safely and smoothly transferred over the top by means of a carriage control which guides the carriage and prevents it from tipping. This carriage control consists of a segmented gear meshing with a loose gear mounted on the head shaft, the speed of the loose gear being regulated by two small steel chain meshings with their sprockets.

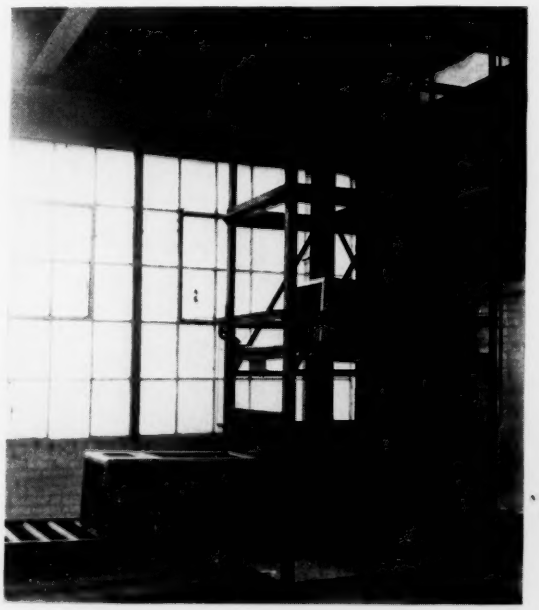


Vertical Hoists

The vertical hoist, while performing a service similar to the straight lift elevating conveyor, is not of the continuous motion type and is usually contained within the confines of one floor level. The carriage for the load consists of a tray with a roller bed, connected by means of a steel cable to the drum and drive mechanism at the top of the hoist.

Vertical hoists are designed primarily to receive boxes, tote pans, etc., from a line of roller conveyor at a low level and deliver them to another line located overhead. They can also receive from an overhead line and descend to a line at a lower level.

A specially designed roller receive station is located at the base of the hoist and is controlled by means of limit switches, so that boxes cannot be admitted except when the carriage is in the proper position to receive them. In a similar manner, other limit switches are located at the discharge end of the hoist so that, in case the line is filled, the hoist will stop until it is cleared. The reverse is true when the hoist is used for lowering objects.



18. Vertical hoist conveyor. Photo courtesy of the Mathews Conveyer Co.







STANDARD-KNAPP CORPORATION

MANUFACTURERS OF CASE SEALING, CASE PACKAGING, AND CAN LABELING MACHINES

Standard!

In Every MAJOR PACKAGING INDUSTRY

Nearly all users of Case Sealers and Case Packers .... *Standardize* on

STANDARD-KNAPP EQUIPMENT!

Why? High production speeds, low per-unit cost, minimum maintenance cost, years of profitable life.

Tell us what your case sealing problems are. It is immaterial whether the case contains bottles, cartons, cans or any other product. Our engineers will gladly give you the benefit of their experience. Write or phone your nearest Standard-Knapp office.







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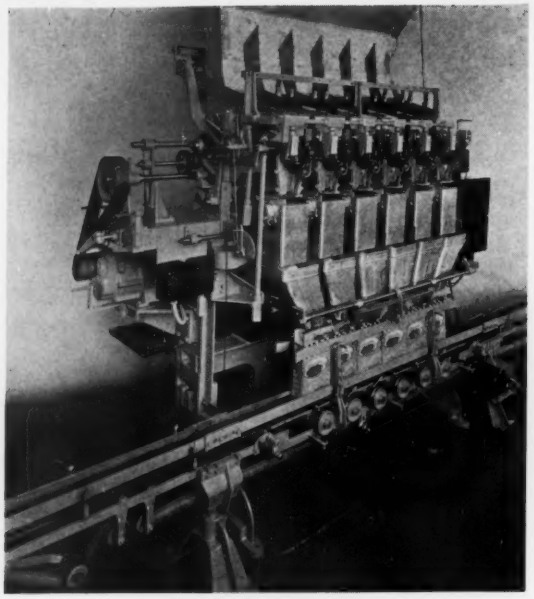
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STANDARD-KNAPP CORPORATION

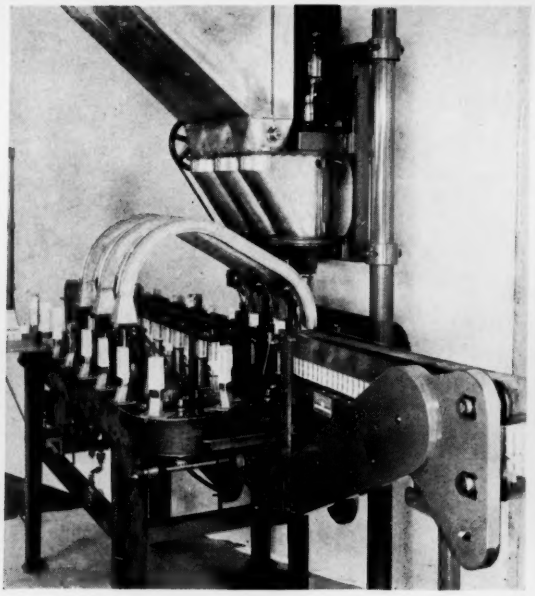
MANUFACTURERS OF CASE SEALING, CASE PACKAGING, AND CAN LABELING MACHINES

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Paul Brown Building, ST. LOUIS, MISSOURI
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1208 S. W. Yamhill Street, PORTLAND OREGON
Windsor House, Victoria Street, LONDON, ENGLAND



1. Six-scale, high speed net weigher for corn flakes, equipped with electric vibrator feeds. Output 55 to 60 13-oz. packages per minute. Courtesy Pneumatic Scale Corp. Ltd.



2. Carton filler for dry materials with bottom and top folding and gluing mechanism. Speed 50 to 60 packages per minute. Courtesy J. L. Ferguson Co.

Weighing and Filling Dry Products

by A. R. KEENE*

The various types of containers used in modern packaging work are familiar to most manufacturers of packaged products. Regardless of the relative merits of all types, it is vitally important that the one you select be constructed carefully. It is essential to choose a design which is attractive and appealing, but it is just as necessary to be certain your package is made to handle efficiently on automatic equipment. Even though your present output can be well taken care of by hand or semi-automatic methods, it won't cost you any more to adopt a container that lends itself to automatic methods. Get started right and you'll be that much further ahead when increasing sales demand maximum output.

Avoid tricky and complicated packages and don't let anyone tell you that unusual shapes and sizes can always be handled without difficulty. Perhaps they can, but your machine builder should be consulted for a final check on all doubtful points.

It is impossible, in this article, to hope to cover the thousand and one points which are important in designing containers to insure packaging efficiency. We will mention a few in the following discussion but you should ask the container maker and machine builder to cooperate with you on your package jobs.

There is one packaging machine function which remains basically the same regardless of container type, namely, filling and weighing. By "the same" we mean that any of the following four methods might be used whether the package is a bag, can, jar, carton or canister. We will list the four systems and discuss each one very briefly:

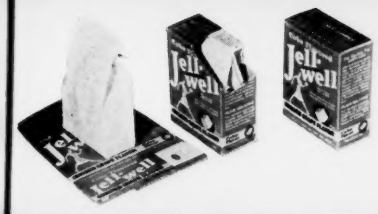
(a) Accurate filling
(b) Gross weight weighing
(c) A combination of (a) and (b)
(d) Net weight weighing

Before considering each of these four basic methods it perhaps will be wise to mention some of the standards, set up by the Department of Commerce, relating to weights and measures. Packagers should likewise take cognizance of additional regulations which may be promulgated under the new Federal Food and Drug Act, which becomes fully effective on June 25, 1939. Export packages and those going partly into export channels likewise come under additional restrictions in some instances. It is an almost invariable rule that a food products package shall be plainly and conspicuously marked with the quantity of the contents in the terms of weight, measure or numerical count on the outside of the container. Certain tolerances and variations from the quantity of the contents indicated are allowed.

* Advertising Manager, Pneumatic Scale Corp. Ltd.

★ TYPICAL EXAMPLES OF MACHINE PACKAGING





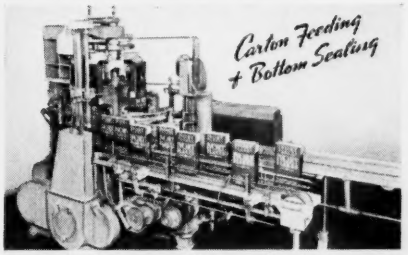


These examples are a few of hundreds Pneumatic machines are handling. Chances are Pneumatic has the best solution of your particular problem too.

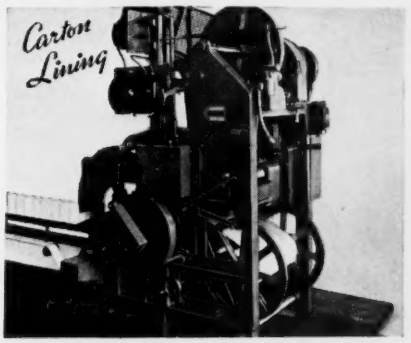
★ PNEUMATIC
PACKAGING & BOTTLING EQUIPMENT

A COMPLETE LINE OF PACKAGING MACHINERY—SEMI & FULLY AUTOMATIC. SPEEDS 50-105 PACKAGES PER MINUTE

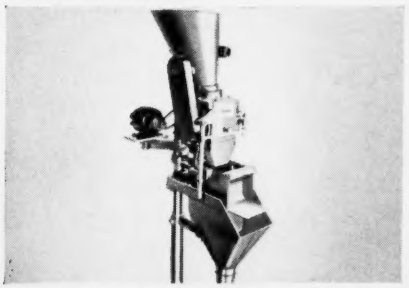
Pioneers in automatic packaging, Pneumatic, next year completes a half-century of service to the industry. Send for an up-to-date file of packaging machine information.



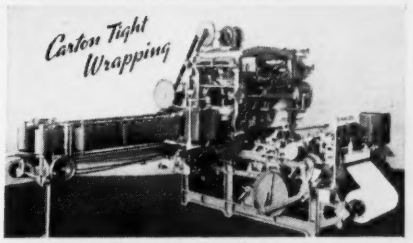
Typical of Pneumatic's complete line are the dozen different models for carton forming and bottom closing.



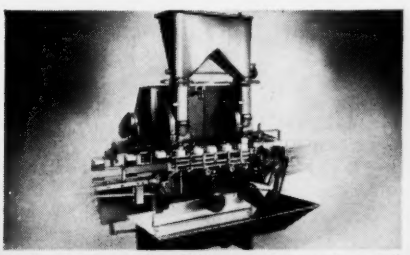
Three different Pneumatic Lining Machines cut carton lining costs to a minimum. Avoid the expense of pre-formed bags.



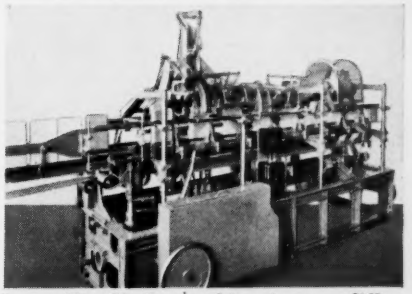
Also a complete range of semi-automatic weighers and fillers for limited output.



Four Tight Wrapping models make this process available for nearly all folding cartons requiring sift-proof, insect-proof construction.

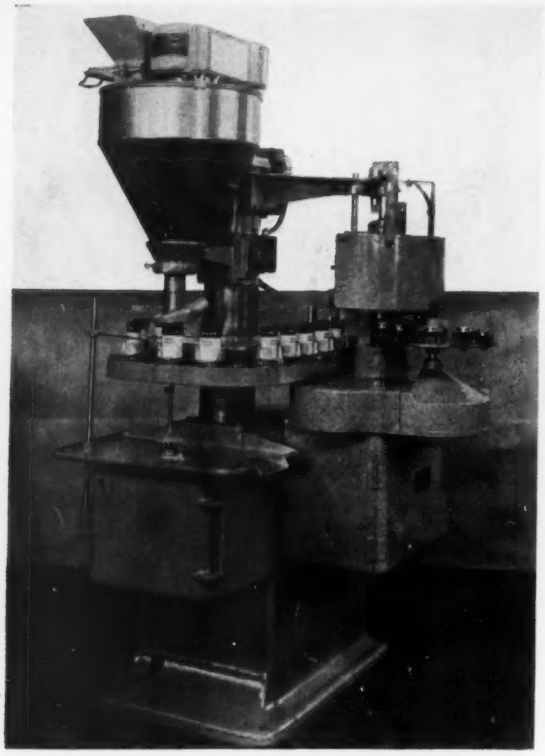


At least twenty-five different automatic weighing machine models for nearly any product and package.

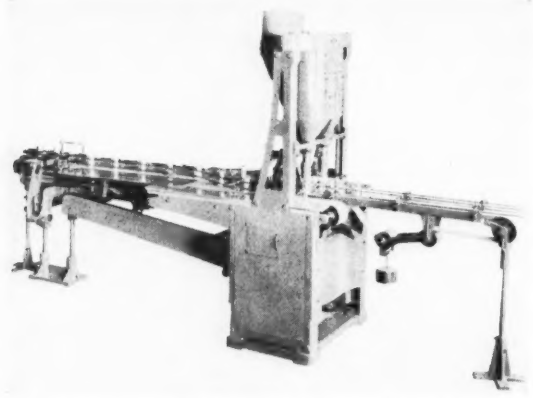


Carton Top Closing machines in many different models, semi-automatic and fully automatic.

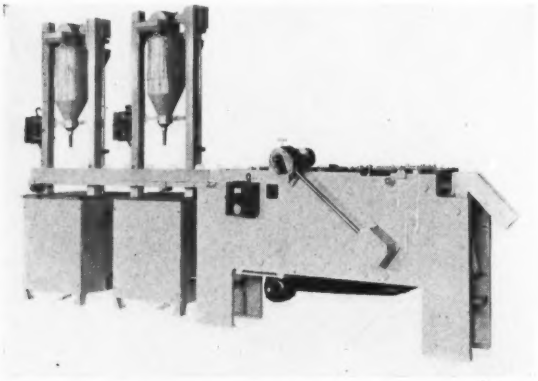
PNEUMATIC SCALE CORP., LTD., 77 Newport Ave., North Quincy, Mass.



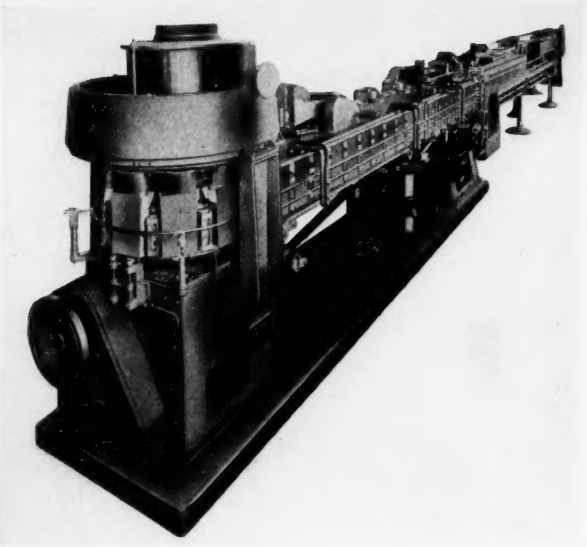
3. Automatic filling and capping machine with lid transfer and feeding device. Production up to 60 per minute. Courtesy F. J. Stokes Machine Co.



4. Automatic duplex filling machine. Courtesy Stokes & Smith Co.



5. Enveloping, filling and sealing unit. Photo courtesy of Stokes & Smith Co.



6. Automatic carton filling and sealing machine which feeds cartons from a supply hopper, bottom seals them, fills through volumetric adjustable measuring pockets on a rotary head and top seals the cartons. Carton motion is continuous. Model shown operates 60 to 70 per minute; other models as high as 140 per minute. Courtesy Stokes & Smith Co.

(1) Discrepancies due exclusively to errors in weighing, measuring or counting which occur in packing conducted in compliance with good commercial practice. (2) Discrepancies in weight or measure due exclusively to difference in atmospheric conditions in various places, and which unavoidably result from the ordinary and customary exposure of the packages to evaporation or to the absorption of water. Discrepancies in the first case mentioned shall be as often above as below the marked quantity. The reasonableness of discrepancies under the second class will be determined on the facts.

Another discrepancy encountered is in not maintaining uniformity in specific gravity of product at point of delivery to the weighing or filling machine. In many instances this is accounted for by stratification of product as it flows from the bin. Sometimes it is caused by necessary agitation in bin. Whether a product is net weighed or gross weighed, there always is a certain percentage of product in each package that is never weighed, viz., the stream in the air between the cut-off gates and the product in the container—at the time of cutting off flow of product. Any variation in specific gravity of product or uniformity of stream of this "never weighed" portion is naturally reflected in the accuracy of weights.

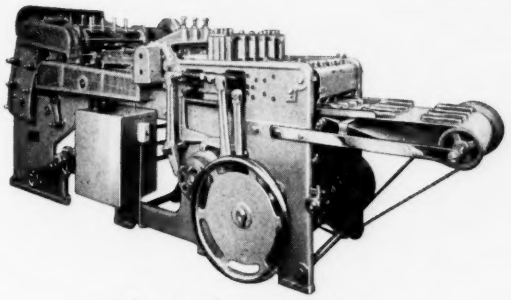
A package containing $1/2$ avoirdupois ounces of food, or less, is "small" and shall be exempt from marking in terms of weight. The term "small" in the foregoing sentence should not be confused with the use of the same word in the following discussion of methods of filling and weighing packages. It is difficult to determine where the line should be drawn in terming a package small or large or medium, as applied to the general packaging field, and therefore we will leave this par-

XUM

CONTINUOUS PRODUCTION...

WITH HUDSON-SHARP WRAPPING MACHINES!

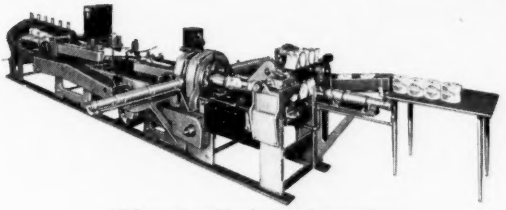
HIGH SPEED · CANDY WRAPPING MACHINE



High speed candy wrapping machines

1—Rotary wrapping machine for candy bars, soap bars and similar products. Has a speed of 75 bars per minute per line with each machine from 1 to 14 lines in width. Takes continuous wrap from rolls of foil, paper, glassine or cellophane . . . slits individual labels and moves product through machine in continuous production.

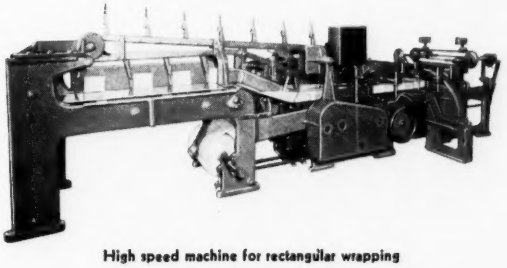
HIGH SPEED · IRREGULAR PACKAGE WRAPPING



High speed machine for irregular wrapping

2—Takes continuous wrapper from roll; tubes wrapper around product; cuts and twists ends over any cylindrical object. Used on toilet tissue rolls, bottles or any similar irregularly shaped product. Printed wrap perfectly registered by means of photo-electric cell.

HIGH SPEED · RECTANGULAR PACKAGE WRAPPING



High speed machine for rectangular wrapping

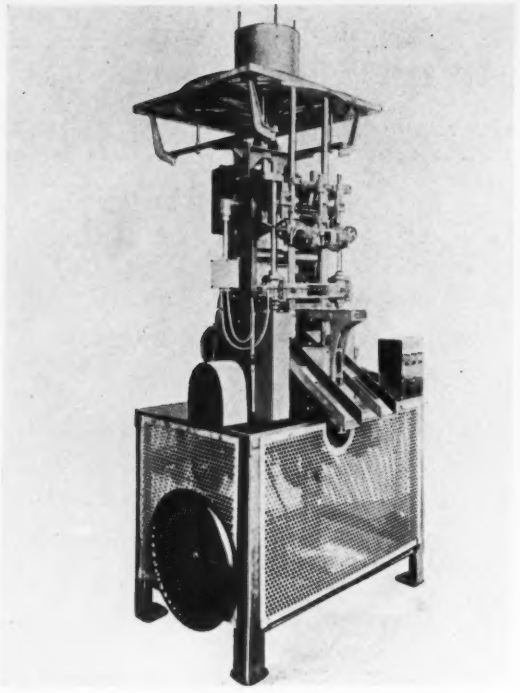
3—Takes continuous wrapper from printed roll; spots product to be wrapped; tubes wrap over product; cuts and folds in ends. Accurate register and perfect placement of wrap is assured at the highest speed.

Hudson-Sharp wrapping machines contain no cam or reciprocating motion, thereby obtaining highest possible production with a minimum of vibration and maintenance problems.

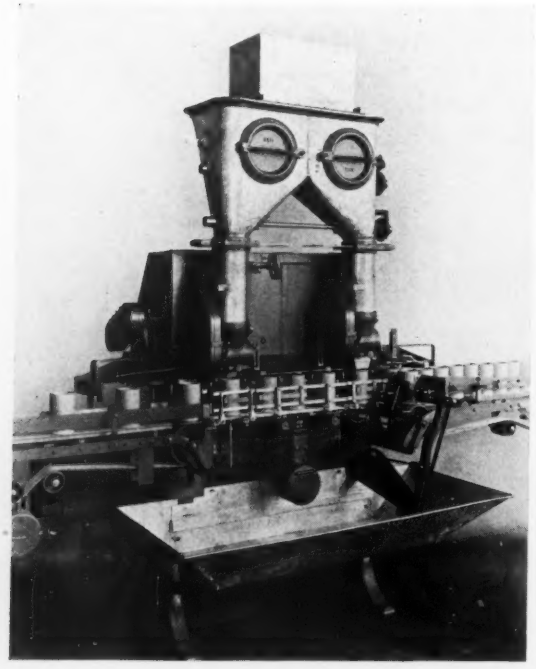
Builders of machines for converting papers and light boards

HUDSON-SHARP MACHINE CO · GREEN BAY · WISCONSIN

XUM



7. Circular gross weight weigher, capable of speeds up to 65 packages per minute. Courtesy Pneumatic Scale Corp., Ltd.



8. Two-scale, straight line gross weight weigher, fully automatic. Speed 25 to 40 per minute. Courtesy Pneumatic Scale Corp., Ltd.

9. Flour packing and weighing unit. Speeds 8 to 30 per minute. Note automatic bag transfer to accurate weighing station and then to tying or sewing or sealing unit. Photo courtesy Pneumatic Scale Corp., Ltd.

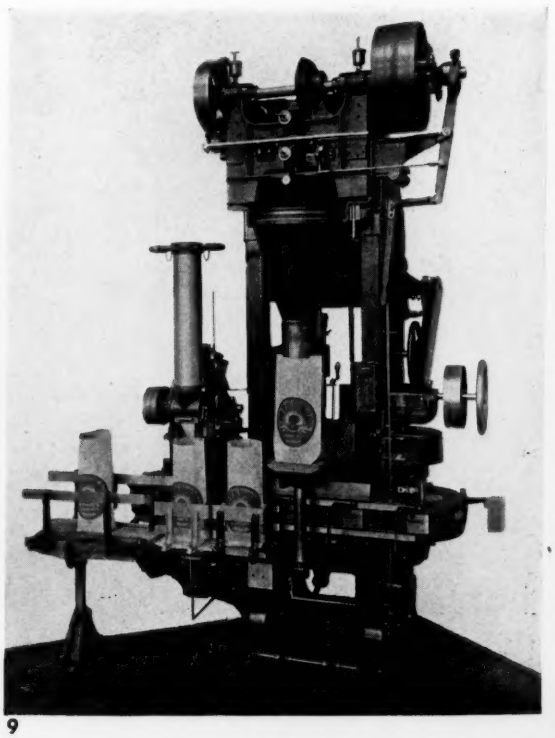
ticular question to the reader's good judgment wherever the word "small" appears in our discussion.

Accurate filling is not the most common principle but probably is the simplest. With this method correct quantities of certain products can be measured mechanically without using a weighing device. One way of accomplishing this is to measure by volume, and the other by means of a definitely timed or regulated feeding of the material. Good commercial accuracies can be guaranteed with correctly built machines of this type as long as the bulk of the material remains uniform. If, however, the nature of your product is such that it varies in weight per unit of volume, then measuring won't be entirely satisfactory, if accuracy is a necessary requirement of your production.

Remember, too, that if your package must be marked with the weight of its contents, then it is important to be sure that any filling method you adopt does give uniformly accurate weights.

Typical cases where accurate filling is successful include: Scouring powder in canisters, jelly crystals and dessert powder in small cartons, tooth-powder in cans, face-powder in paper boxes, cut tea in tea-balls, granular salts in bottles. Speeds ranging all the way from 10 per minute up to 120 per minute are entirely practical with the many units available.

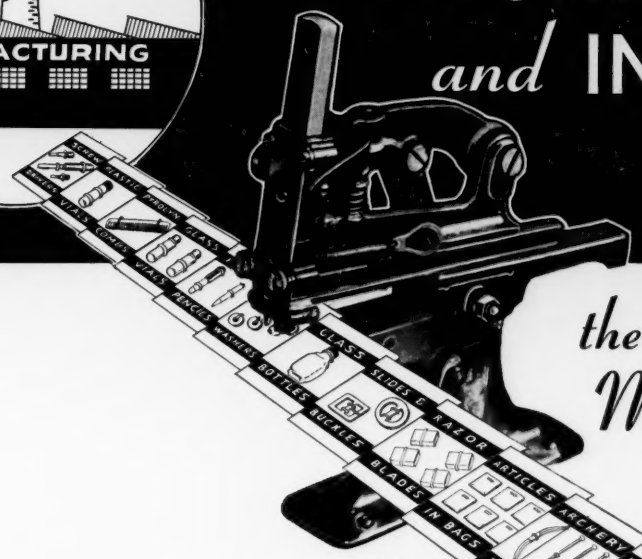
Gross weight weighing is next on our list and here, as the name implies, both the package and its contents are weighed, not just the product alone. You will realize, therefore, that any variation in weight of the package may affect the weight of the contents. Usually, however, this is not a serious variation with most types of containers. The flow of material from feed-hopper



9



the Production Link that DECREASES COST *and* INCREASES *Your Sales Scope*



the Modern Carding Method that Gives You— PRODUCTION!

STAPLEcraft

From thin glass vials to hardware items—STAPLECRAFT Carding Equipment provides a CHEAPER—BETTER—FASTER method of attaching merchandise to display cards. If you're interested in obtaining "POINT OF SALE" counter positions for your merchandise—card it via STAPLECRAFT and watch sales soar!

You'll want to know more about this advanced type of versatile equipment that offers maximum freedom of position on cards—the broadest possible range of types of products.

Precision and speed are highly developed by ingenious types of spotting devices and adjustable guides for difficult-to-handle merchandise.

You can card one or one hundred items on the same card. One STAPLECRAFT machine is carding thirty-seven different hardware articles of varying sizes and shapes without change of mechanism.

You can't match its versatility and maintain its super speed with any other method—you can't imagine how such sturdy precision equipment can cost so little—you can't "Hit bottom" with production costs without STAPLECRAFT carding equipment.

A special catalog brochure gives you a COMPLETE picturization of "Carding via STAPLECRAFT"—send for your copy—it's FREE! In the meantime—if you would like to see what STAPLECRAFT can do for you, send along samples of your merchandise which you now card or are contemplating carding. We'll show you how to do the job the STAPLECRAFT way without cost to you.

Acme STAPLECRAFT Carding Equipment is the accepted method of carding by major companies throughout the world.



STAPLES
LARGE or SMALL

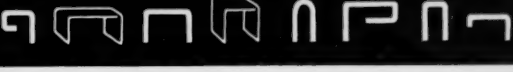
OF MANY WIDTHS, LENGTHS & SHAPES FROM 1/16" TO 1 1/4" CROWN WIDTHS AND 1/16 TO 1 3/4" LEG LENGTHS, IN STEEL, BLACK, BRASS, COPPER, MONEL, ETC., FLAT, HUMP OR ROUND TOP.



FOR FASTENING IN MANY WAYS.



BLUNT OR POINTED IN FINE, MEDIUM OR HEAVY, ROUND OR BROAD FLAT WIRE STAPLES.



ACME STAPLE CO.

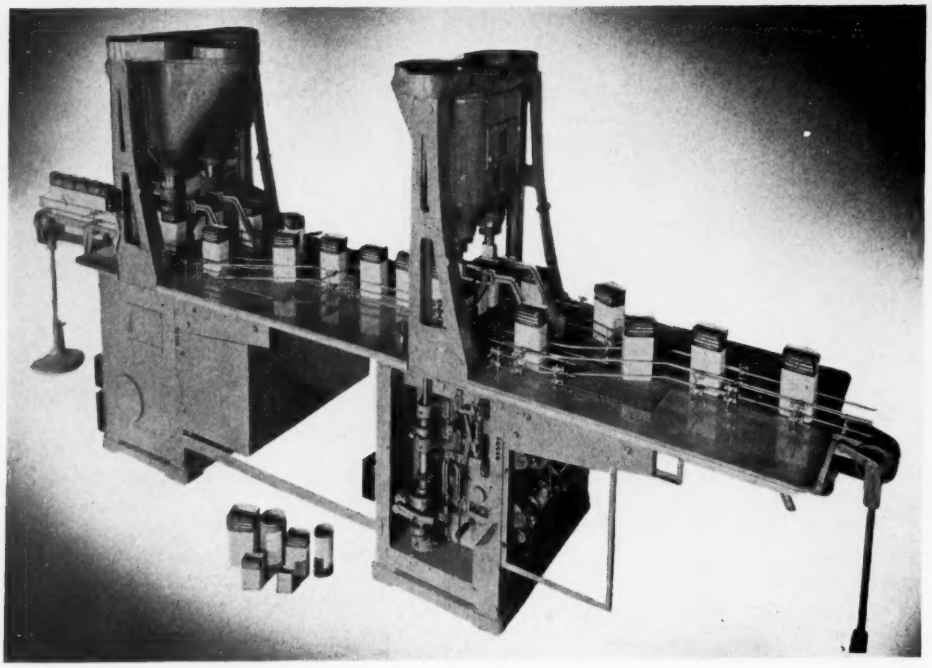
Staplecrafters Since 1894

ACME BUILDING, CAMDEN, N. J.

GET THIS PICTURE DRAMATIZATION OF CARDING

Your name and address brings your copy Free!





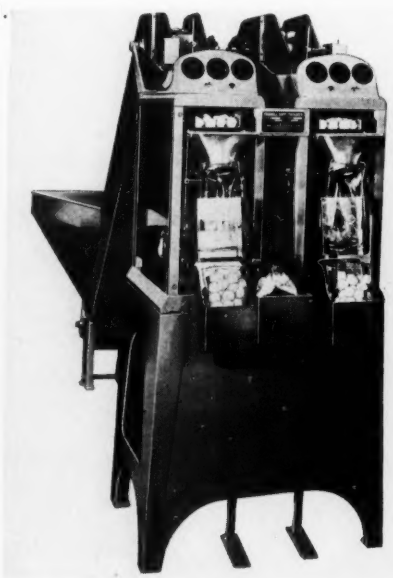
10. Four-station heavy duty filling machine. First two stations fill with bulk load; second two stations fill balance of load, checking by gross weight. Speed up to 60 containers per minute. Also may be used with complete fill at each of four stations for total speed of 120 packages per minute. Photo courtesy of Stokes & Smith Co.

to package is controlled by the scale beam on one end of which the package rests during filling. When the right amount of material is weighed into the package the scale beam trips a shut-off which stops the flow of material instantly and indexes the package ahead to the next position. Usually gross weight weighing is done on two scale machines with the bulk load ($^2/_3$ to $^9/_{10}$) weighed at the first scale and the final extremely accurate weight delivered by a fine stream at a second scale.

Gross weight weighing is essential when accurate weighing of non-free-flowing commodities is necessary, and especially so if your package is beyond the small size classification. Another group of representative cases will help to show where gross weight weighing finds its place: Powdered sugar in cartons, cocoa in cans or canisters, malted-milk products in cans, prepared flour in cartons are a few examples. Speeds range from 10 per minute to 70 per minute.

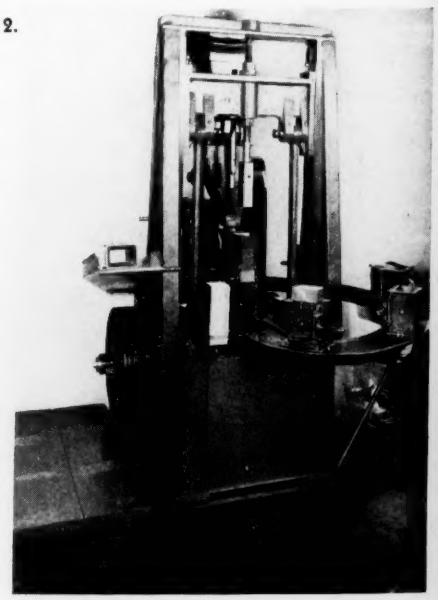
A practice sometimes followed is to combine in one machine the two principles of gross weighing and measuring. The clearest explanation of this method can be given by describing one commonly used machine of this type, namely, the bag-flour packer. As in any filling or weighing task, the natural objectives are maximum speed and accurate weights. Here there is the additional requirement of a tightly packed bag. The latter factor makes straight gross weighing impractical but by resorting to a worm packer for the machine's first sta-

11.



11. The "Elec-Tri-Pak" weigher utilizing electrically operated vibration plates to handle delicate products such as potato chips, crackers, etc., without injury. Photo courtesy Triangle Package Machinery Co.

12.

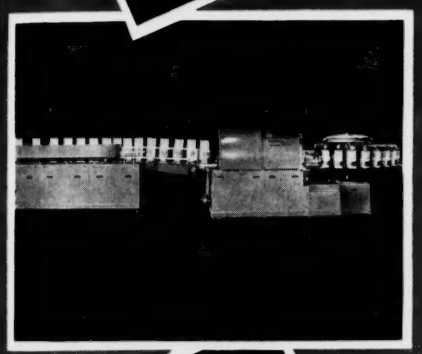


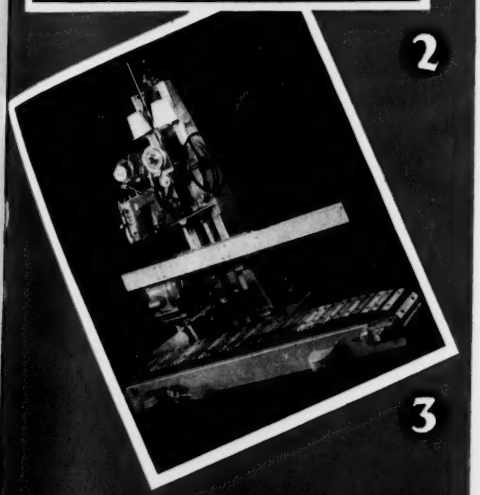
12. Automatic net weigher with automatic press for weighing, filling and pressing dry materials into paper bags. Courtesy Triangle Package Machinery Co.

1940 and WAR?



1


2


3

Yes! Industry's eternal enemies; waste, excessive costs and obsolete methods continue their never ceasing offensive against normal profits... 1940 will again record many casualties among the complacent who will be out-maneuvered by alert competition... progressive competition... competition keenly aware of the newer approaches to every objective of modern streamlined enterprise... packaging becomes a focal point of such considerations and Consolidated again makes important contributions.

1 CAPEM

2 SEALTITE

3 HOEPNER

AUTOMATIC SCREW CAPPING EQUIPMENT. Designed to handle any type of modern cap or closure. Sorts, feeds and applies practically any size screw cap, broken thread cap, shallow or deep-skirted cap of metal or plastic to any type of container at any required speed.

SEALTITE PASTED CLOSURE EQUIPMENT FOR SMALL BAGS. A Sealtite closure gives added sales appeal to any paper bag package. Uses any make of gusseted bag. Shows surprising reductions in packaging costs.

AUTOMATIC SCALES, BAG CLOSERS AND FILLING MACHINERY. Sugar, salt and all types of heavy chemicals, as well as grains and feeds of every description are weighed accurately and economically on a wide variety of completely automatic equipment.

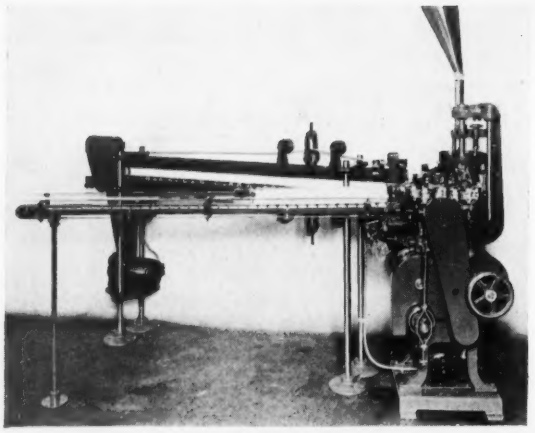
A sound company policy determines the course which Consolidated continues to follow. This policy discourages indiscriminate machine development and concentrates a generation of packaging experience toward fewer and more flexible types... distinguished for sound engineering design and unexcelled performance.

CONSOLIDATED PACKAGING MACHINERY CORP.

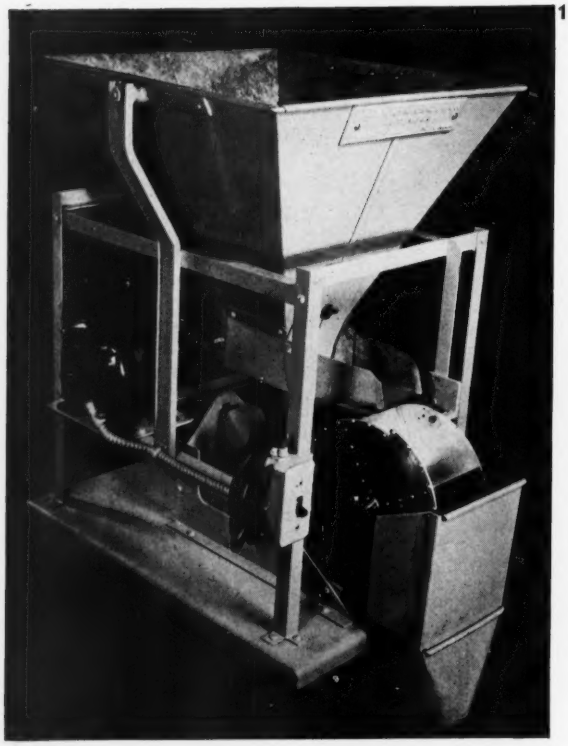
BUFFALO, N.Y.



13



14



15

13. Flour packing machine utilizing a gross weight weighing system with bulk feed and dribble feed. Machine also scores the bag, check-weighs, closes and seals. Courtesy Arenco Machine Co. **14.** Combination filling and sealing machine for miniature packages. This unit feeds, forms, fills and seals cartons containing $4^1/_2$ grams of powdered yeast. The "cup" measuring principle is used, at a speed of 100 packages per minute. Courtesy Pneumatic Scale Corp., Ltd. **15.** Net weighing and filling machine using vibrating feed and a tripping wheel balanced on a scale. When the desired weight of product has been deposited into a section of the wheel, the movement of the balance causes the wheel to revolve a quarter-turn, discharging the product into the container. Courtesy Amsco Packaging Machinery, Inc.

tion, the greater part of the bag contents can be packed in tightly at reasonable speed and without weighing. To get weight accuracy it is only necessary to finish off the filling at one or two subsequent stations by directing a fine stream of material into the bag while it rests on a platform scale.

Net Weight Weighing

Finally, there is the class of package filling and weighing termed "net weight weighing." With this system the package contents are weighed separately before being transferred to the package. In order to make use of this method the first essential is that your product be either free-flowing or at least semi-free-flowing. Net weight weighing cannot be efficient if the material is at all sticky or tends to build up and cling to feed hopper or funnel surfaces. Where the nature of the product will permit the use of this method it is usually true that the weights will be extremely accurate. Care should be used in selecting the net weight method as it is not always the most satisfactory, even though accurate weights might be possible from a machine standpoint.

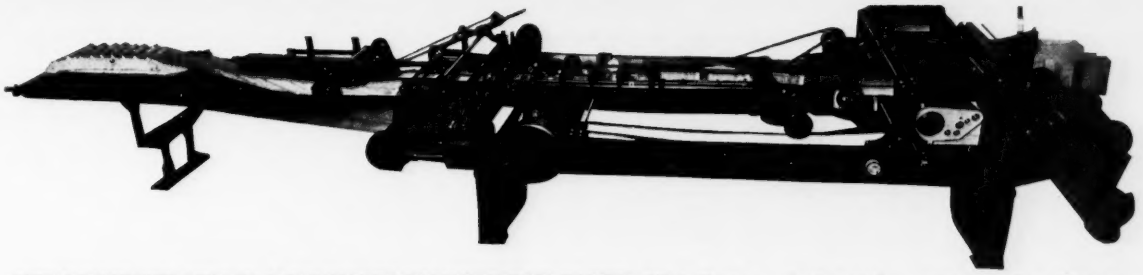
Again, a group of typical applications will perhaps be helpful. Among tasks being handled successfully by net weight are: Coffee in cans, bags or cartons, salt in cartons or bags, tea in canisters or cartons, rolled oats in round or rectangular packages, etc. Speeds range from 10 per minute to 100 per minute.

All of the foregoing discussion deals mainly with dry product filling and weighing, but of course there are

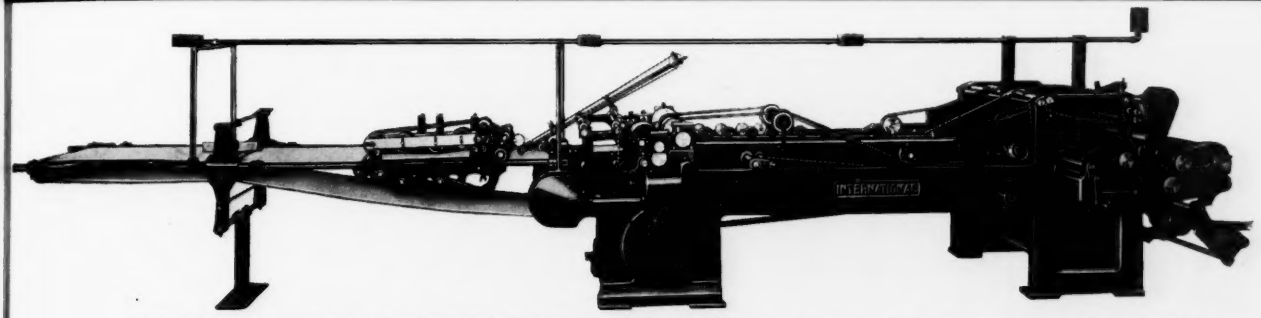
XUM

IF YOU WANT
Better Box Making Machinery
TRY INTERNATIONAL

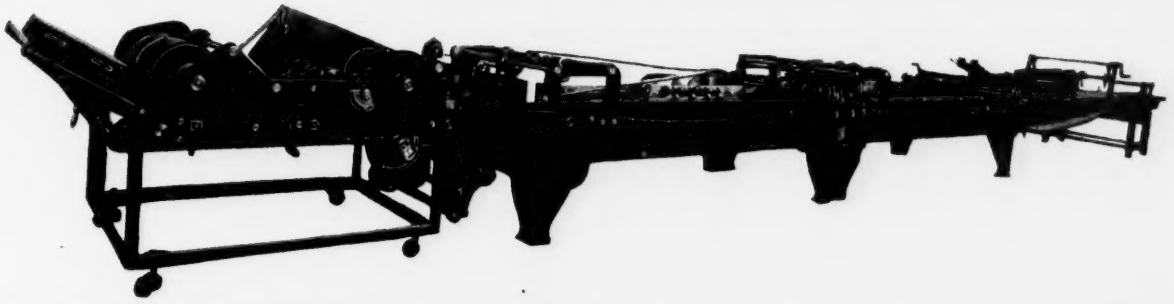
SINCE 1903 INTERNATIONAL HAS BEEN MAKING BOX MAKING MACHINES OF PRACTICALLY EVERY DESCRIPTION. OUR HIGH SPEED AUTOMATIC FOLDING BOX GLUERS ARE FAMOUS THROUGHOUT THE WORLD. THEY PRODUCE MORE FOLDING BOXES PER HOUR, WITH GREATER ACCURACY AND AT LOWEST COST PER THOUSAND



THE STANDARD MODEL B ECONOMY FOLDING BOX GLUER: Wide Range . . . high speed . . . a veritable box plant in a single unit. Universally accepted as standard throughout the world. Range: from 1″ to 20½″ wide folded flat, from 3″ to 40″ in length.



THE NEW MODEL 4U EFFICIENCY FOLDING BOX GLUER: For folding and gluing small and medium sized folding boxes. This machine has consistently broken production records in the plants where it is operated. Vari-speed motor drive built into the machine. Range: from ¾″ to 14″ wide folded flat, from 2¼″ to 30″ in length.



SIX-IN-ONE ALL PURPOSE MACHINE: For handling six different classes of work on a single machine in a wide range of sizes.

SEND TODAY FOR DETAILED INFORMATION

INTERNATIONAL PAPER BOX MACHINE CO.
315 MAIN STREET, NASHUA, N. H., U. S. A.

Canadian Representatives
MANTON BROS., LTD.
97 ELIZABETH STREET
TORONTO, ONTARIO

English Representatives
ANDREW & SUTER, LTD.
23 GOSWELL RD., ALDERSGATE
LONDON, EC1, ENGLAND

Australian Representatives
S. COOKE PROPRIETARY, LTD.
MELBOURNE
AUSTRALIA

XUM


IF YOUR PROBLEM
MATERIAL: Powders, granular products, pastes 1
CAPACITY: ½ oz. to 5 lbs.—any container
PRODUCTION: 15 to 30 per minute
OPERATORS: One
Filling by gross weight, volumetric measurement or packing.
Write for literature on . . .
S&S UNIVERSAL FILLER
MATERIAL: Powders, granular products, pastes 2
CAPACITY: ½ oz. to 15 lbs.—any container
PRODUCTION: 10 to 20 per minute
OPERATORS: One
Filling by gross weight, volumetric measurement or packing.
Write for literature on . . .
S&S HEAVY DUTY FILLER
MATERIAL: Powders, granular products 3
CAPACITY: 1 oz. to 5 lbs.—cans, boxes, canisters
PRODUCTION: 20 to 60 per minute
OPERATORS: One
Filling by gross weight, volumetric measurement or combination of both.
Write for literature on . . .
S&S SINGLE OR DOUBLE UNIT FILLER (AUTOMATIC)
MATERIAL: Salted nuts, candies, small crackers, powders, and individual pieces 4
CAPACITY: ⅛ oz. to 1 lb. Cellophane, Pliofilm or other heat sealing material
PRODUCTION: 50 to 60 per minute
OPERATORS: One
Filling by measurement or by auger.
Write for literature on . . .
S&S TRANSWRAP PACKAGING MACHINE
STOKES & SMITH Co
FRANKFORD PHILADELPHIA



5 **MATERIAL:** Nuts in shells, hard candies, flaked products

CAPACITY: 4 oz. to 1½ lbs. (220 cubic inches)

PRODUCTION: 15 to 25 per minute

OPERATORS: One

Filling by net weight.

Write for literature on



S&S CONVEYOR NET WEIGHT SCALE



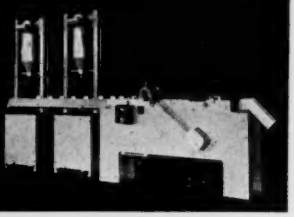
6 **MATERIAL:** Powders, cereals, seeds, chemicals, etc.

CAPACITY: Envelopes 2" to 8" high, when closed

PRODUCTION: 60 to 120 per minute

OPERATORS: None. Entirely automatic. Connects with and seals filled envelopes from powder filler or net weight scale

Write for literature on



S&S BAG AND ENVELOPE SEALER



7 **MATERIAL:** All food and grocery products in cartons

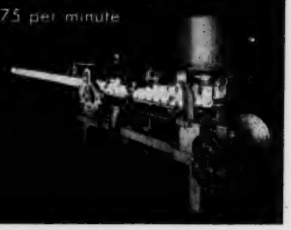
CAPACITY: Maximum carton: 10½" x 6½" x 4½"
Minimum carton: 2¾" x 1¾" x ¾"

PRODUCTION: 40 to 75 per minute

OPERATORS: One

Several Models. Feeds cartons, bottom seals, fills, top seals.

Write for literature on



S&S NEVERSTOP CARTON FILLER & SEALER



8 **MATERIAL:** All food and grocery products

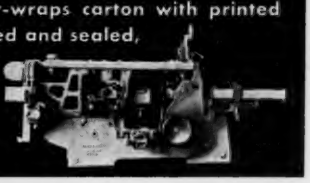
CAPACITY: Maximum carton: 10" x 6½" x 4"
Minimum carton: 3¾" x 1½" x 1"

PRODUCTION: 60 to 70 per minute

OPERATORS: One

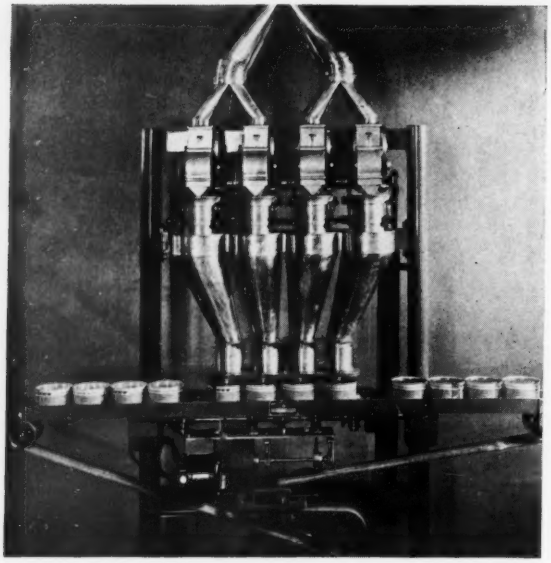
Automatically tight-wraps carton with printed label, after it is filled and sealed, making attractive, siftless tight-wrapped package for all products.

Write for literature



S&S AUTOMATIC TIGHT WRAPPER

STOKES & SMITH Co.
FRANKFORD PHILADELPHIA



16. Straight line automatic net weigher with power feed filling four packages at a time. Speed 40 to 45 per minute. Courtesy J. L. Ferguson Co.



17. Unit type scale in combination with rotary filler for fibre can filling. Courtesy Consolidated Packaging Machinery Corp.

other important tasks which deserve mention to complete the picture of packaging methods in general.

Be sure that your package, whether a carton or some other type, is made sufficiently large to permit rapid machine filling or weighing of the required volume of material. At the same time make certain that it isn't too large. You don't want your consumer to receive a package that seems to be half empty. If your package is a folding carton ask your machine builder to check it for correct machine handling construction. Proper scoring, right weight cardboard, correct shape, strong side seam at right location, are only a few points to keep in mind. The folding carton is one of the most widely accepted types and at the same time the equipment available for making it up in various forms is offered in a most complete range of sizes, types and capacities for every manufacturer's needs.

Selecting Package Styles

Because the folding carton is particularly well suited for packaging dry products there are a number of styles which have been developed. Careful checking is advised bearing in mind the nature of the product and the style which will be most convenient for the consumer. The seal-end carton, with extended flaps, is most popular for products which are liable to sift, but is difficult to seal by hand. Reverse tuck and straight tuck cartons are readily sealed by hand, as well as by machine, and offer ready examination of the product prior to purchase. For more complete data on carton styles see pages 68 et seq.

The company whose requirements are not large can install an inexpensive hook-up which will help to lower packaging costs. As need demands more production, this first installation can be replaced piece-meal by more automatic and faster units. Thus an output as low as 5000 per day will justify packaging equipment of some sort being installed.

Basic Operations

With folding cartons there are certain basic operations to consider. For some carton packages all will be needed, while for others only part of these are necessary:

(1) Carton feeding and forming
(2) Bottom sealing
(3) Lining
(4) Filling or weighing
(5) Carton closing
(6) Wrapping

The usual practice is to handle each of these tasks on an individual unit but in some cases it is practical to take care of several on a combination machine.

The photographs reproduced in this article show how a complete packaging job might be handled with only one machine, or on the other hand require a number of units in the hook-up.

The correct planning of packaging equipment installations is an important matter. Another section of the Packaging Catalog gives some recommendations and shows practical layouts. For maximum efficiency in your packaging room consult with packaging engineers who have worked out many of these installations.

Wonderful strides have been made in the improvement of packaging machinery during the past few years. You may be operating equipment that is giving excellent results but the chances are that if it is even ten years old it is far from the most efficient available.

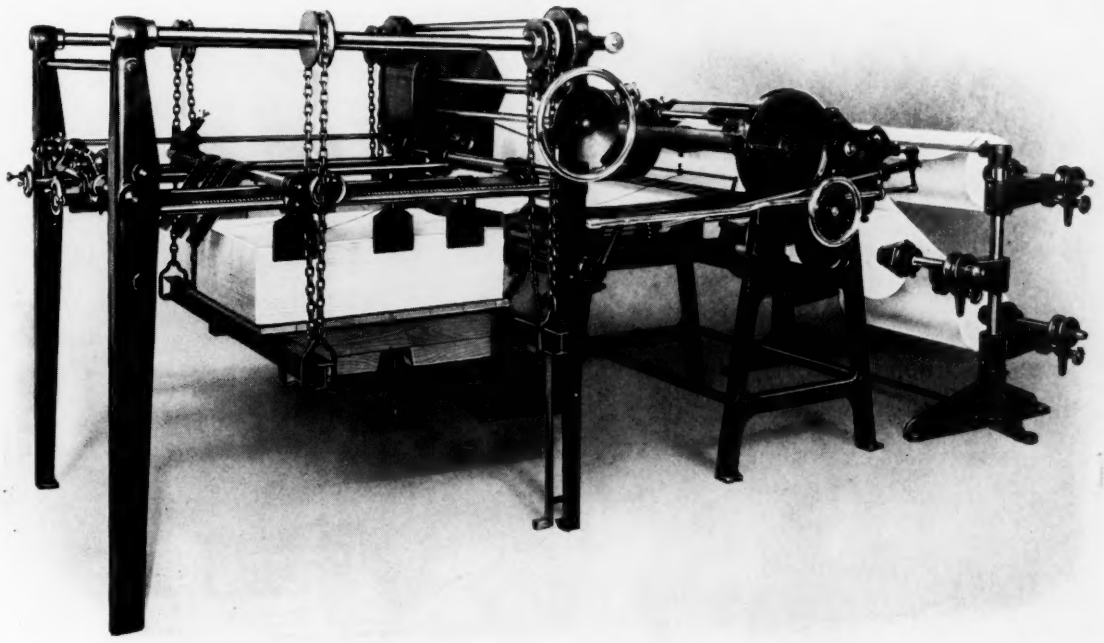
XUM

WHERE WILL YOUR 1940 PROFITS COME FROM?

They must come from one of two sources: either thru greater volume of sales or thru greater margin of profit on the sales you make. In the economic set up of things today, the profit-attacking inroads being made by federal and local taxes, increased wages, shorter working hours, plus keener competition, will force you to seek short-cuts, without sacrificing standards of high quality or efficient production. You must therefore investigate carefully the roads which are open to you thru the untiring efforts of those who have produced machines designed specifically to cut your labor costs, and who have had only this in mind in the inception of the equipment which they offer.

BECK AUTOMATIC CURL REMOVING HIGH SPEED SHEET CUTTER

is the product of a company established over 75 years, who had bent nerve and sinew in solving the most difficult sheeting problems known today. For the cutting from rolls into sheets, with extreme accuracy, all manner of paper both plain and fancy, coated papers, waxed, glassine, tissue, foils, velours, tracing linen, blue print and drawing papers, imitation leather, oil-cloth, wall paper, burlap and other fabric materials, as well as *Pliofilm*, *Cellophane* and other Cellulose papers BECK Sheeters are known to the four corners of the world, and are considered the highest standard in sheeting equipment. Machines are ball and roller bearing equipped throughout, with alemite fittings for pressure lubrication. Built in three sizes 36, 45 and 55" wide, they are ruggedly designed for years of enduring service.



(Showing Sheeter with Piler Having Automatic Lowering Table—Heavy Parent Roll Stand)

AUTOMATIC LOWERING TABLE of SHEET-PILER takes sheets 50" long and a pile 33" high. Jobs sheets on four sides at once—with ball bearing wings. High speed for quick return of empty table—slow speed for heavy piles. Definitely high production unit with completely revolutionary lay-boy principles—

ELECTRIC-EYE with space and velocity correction constitutes the ultimate for accuracy and speed in "spot sheeting." BECK Sheeters are now in extensive use equipped with Differential Control units and typify the most modern method for securing exceptional accuracies, plus accelerated production—

RAZOR-BLADE SLITTERS & REWINDERS are now established BECK methods for producing a dustless cut on Cellophane, etc., free from "built up" edges, and resulting in extraordinary firmness in the rewinding. We also offer Shear-Cut principle & Disc Cutter Slitters for a variety of other kinds of work.

CIRCULARS AND PRICES WILL BE GLADLY SENT

CHARLES BECK MACHINE COMPANY

13th AT CALLOWHILL STREETS PHILADELPHIA, PA.

Check-Weighing Scales

by K. B. NEFF*

Scales are classified, relative to use, under two general groups—first, scales for weighing unknown quantities or catch weighing and, second, scales for weighing pre-determined quantities. For each of these classifications, it is important that a scale be selected which is designed for and adapted to the intended use.

More and more of the world's commodities are being marketed in pre-determined packages and vast strides have been made in developing packaging equipment and containers designed to appeal to the consumer.

In considering this subject, we might include the various types of packaging operations, such as hand filling, semi-automatic packaging and completely automatic packaging. In all of these operations, the scale is still the controlling element. It is easy to obtain the first 97, 98, or even 99 packages from a given amount of bulk; the problem arises in getting the last 1, 2, or 3 packages, in which the profit lies.

For smaller packages ranging from a fraction of an ounce up to 100 pounds, the balance type of scale is most commonly used for check-weighing. The development of an over-and-under weight indicator has made the balance type of scale especially well adapted for production and check-weighing of packages up to 100 pounds. This type of scale can be built to a high degree of sensitivity, is not seriously affected by machinery vibration and weighs correctly in any normal out-of-level position. The visible indication magnifies weight errors and makes it possible for any class of labor to give accurate weights. The scale is simple in structure, does not require a great deal of service and simplifies the process of weighing and of supervision.

There are a number of different models and types of over-and-under weight balances, designed and constructed to take care of various commodities and packaging operations. For floor or low bench operations, a top reading dial can be provided. In some scales, the tower is inclined, thus setting the dial at the normal reading angle and relieving strain on the operator. In other types, the position of the indicator is so arranged as to greatly increase the speed of the scale. For unusual corrosive or acid conditions, special finishes are provided which lengthen the life of the scale.

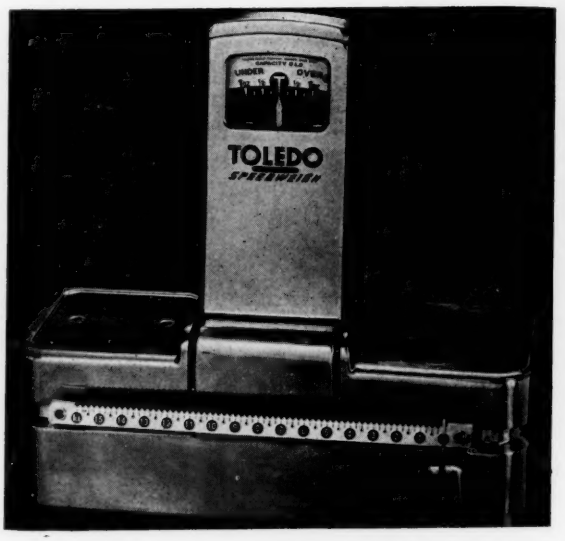
In all of these various types, the scale dial shows the zero reading, which indicates the exact weight point. The dial may also be provided with weight graduations or tolerance marks. Where graduations are used, the operator or inspector is able to determine the amount of weight error in the package, thus affording a guide in adjusting the filling equipment. If the scale is used for checking different commodities, the dial may be equipped with adjustable, mechanical tolerance markers.

Just as it is important to select the proper type of scale for packaging or check-weighing, it is also important to select a scale of the proper capacity for the package being

* Secretary and Treasurer, The Exact Weight Scale Co.



1. Balance scale utilizing a plastic housing to enclose the weighing unit. Indicator has four-way full circle dial visible from any position and lighted from inside scale tower. Courtesy The Exact Weight Scale Co.



2. Pre-determined weight scale with a claimed accuracy of 1/64th of an oz. or 1/1000th of a lb. The indicator is controlled by a hydraulic shock absorber and the beam is notched at each graduation for speedy poise setting. Photo courtesy Toledo Scale Co.



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ARENCO AUTOMATIC PACKER

This machine delivers square cornered, tightly closed, tamper-proof, compactly filled bags, uniform in size, carton-like in appearance, attractive for store or window display and efficient in use. It can be used for any powdered or granular product such as sugar, coffee, cereal, and flour. The sealing strip covers the fold and extends part way down the sides of the bag. There is no adhesion to the bag top. When the strip is slit, the bag opens without tearing or pulling. An advertising card or pamphlet can be placed inside the folds automatically. Write to us for illustrated folder.

- ARENCO Automatic Packing Machines
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ARENCO

A R E N C O
MACHINE COMPANY
INCORPORATED
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3. Left: Check-weighing scale utilizing illuminated frosted glass chart suitably graduated instead of mechanical indication. Courtesy The Exact Weight Scale Co. **4.** Right: Hand operated check-weighing scale. Courtesy The Exact Weight Scale Co.

weighed. For instance, a scale which is built with sufficient sensitivity for weighing 10-lb. packages, would not have the necessary sensitivity for 1-oz. or 4-oz. packages. A $^1/_{32}$-oz. over-weight on a 5-lb. package would not be a serious loss, but a similar under-weight on a 2-oz. package would be serious.

For check-weighing larger packages, some type of beam scale or a dial scale is generally used. A recent development, which tends to make the beam scale well adapted as a packaging scale, is that of an over-and-under weight indicator. This serves the same purpose to the beam scale as the over-and-under weight dial does to the balance scale.

In hand filling, it is essential that all packages be weighed. This requires the use of a scale which provides close accuracy, speed and a minimum of strain on the eyes and arms of the operator.

Some filling machines work on the volumetric principle. Even in these, it is important that the finished packages be check-weighed, because a change in the texture of the material might result in an incorrect weight in the finished package. Many of the packaging machines are controlled by an inbuilt scale.

All automatic fillers are equipped with regulators to increase or decrease the flow of material, in order to permit the operator to make adjustments necessary to correct weight errors disclosed by the checking scale. Either the volumetric or the weight-controlled, automatic filling or packaging machine is only as accurate as the independent checking scale against which the finished package is checked.

Quite often the check-weighing is done in a dusty location where quantities of finely pulverized material might collect on the scale. In these instances, especially designed scales are available (equipped with grid platforms, weight covers, etc.) to protect the accuracy of the scale during operation.

In some filling operations, no automatic filling device is provided, but the bags or containers are filled to something less than capacity, and then placed on the "over-and-under" scale. Material is then sifted into the container until the weight is brought up.

For handling coarser materials in bags, a special bagging scale is provided. The bag is held in position on the scale by a special clamp, and the flow of material into the bag is indicated on the scale dial. The cut-off is made by a hand-operated valve. This scale is, of course, of the dial type, and the weight indicated on the dial serves as an automatic check-weight for the bag.

Each plant usually has its own method of determining the number of packages to be check-weighed. The tendency, however, is to check-weigh packages more frequently in order to provide uniformity in the weight of the finished packages. As a final precaution to insure correct weight packages, a survey is often made of the finished packages in the stock room. For this purpose, a check sheet is provided, having a column for over-weight, under-weight and correct packages.

From this check sheet, the average over-weight or under-weight error is determined. The seriousness of the error depends somewhat upon the size of the package. For example, an over-weight of $^1/_{16}$ oz. on a 5-lb. package would represent only .08 per cent loss, whereas on a 2-lb. package the same over-weight would represent 3.13 per cent loss. It is obvious that such a loss on a small package would have a serious bearing on the final profit and loss figure. The weight errors are often shown on a specially designed graph, thus making the weight condition of the packages visible at a glance.

As an additional means of check in many plants a slack filled package detector is used. This device has an automatic finger arrangement which feels for the height of the material in each package and thus prevents sealing of partially filled containers.

★ TYPICAL EXAMPLES OF MACHINE BOTTLING







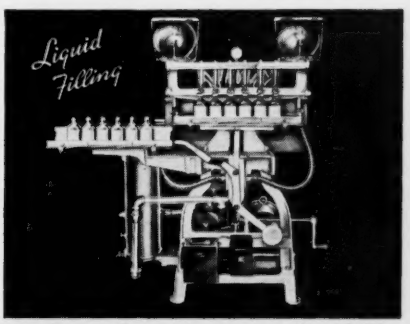
Your problem may differ from any of those we have cited but if it concerns cleaning, filling, capping or labeling we may be able to help. There's no obligation in consulting Pneumatic.

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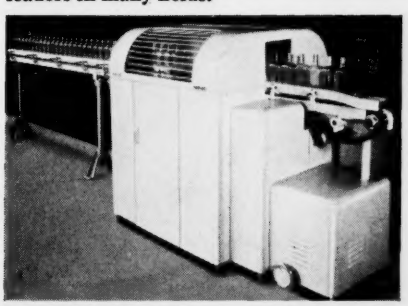
Pneumatic is the one machine builder offering all four; cleaning, filling, capping & labeling machines. Many different models.



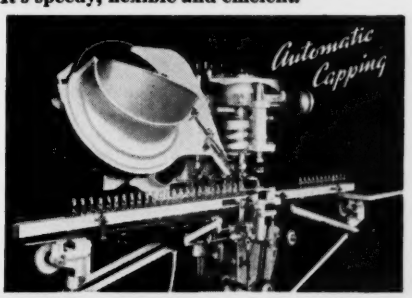
Dry air cleaning, for new glassware, using the inverted bottle system, has been proved by leaders in many fields.



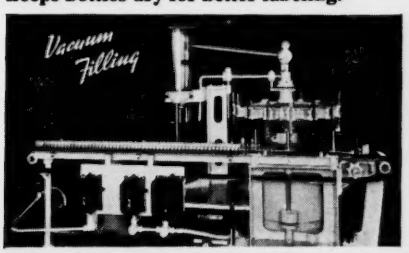
This Samco Jr. semi-automatic liquid filler is the most versatile filling machine available. It's speedy, flexible and efficient.



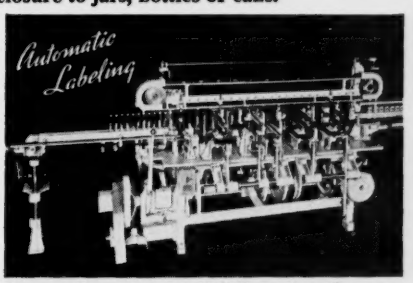
Inverted bottle air cleaning is simpler, faster, more economical than water washing and keeps bottles dry for better labeling.



Two different capping machine models for sorting, feeding and applying any turn-on closure to jars, bottles or cans.



Also a full range of automatic rotary and straight-line fillers for liquids and semi-liquids in glass or tin containers.

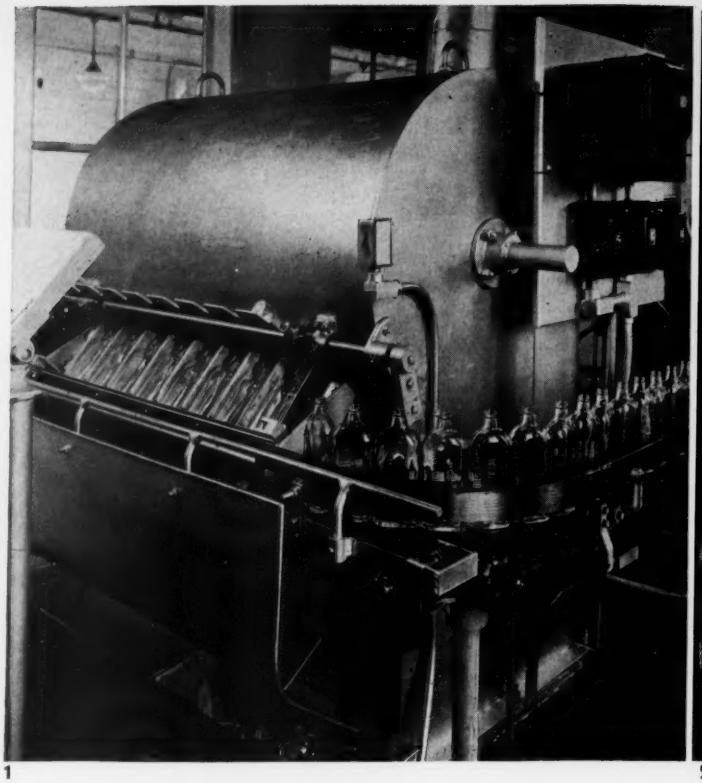


Pneumatic automatic labelers glue the container instead of the label. Result is wrinkle-free, perfectly registered labels.

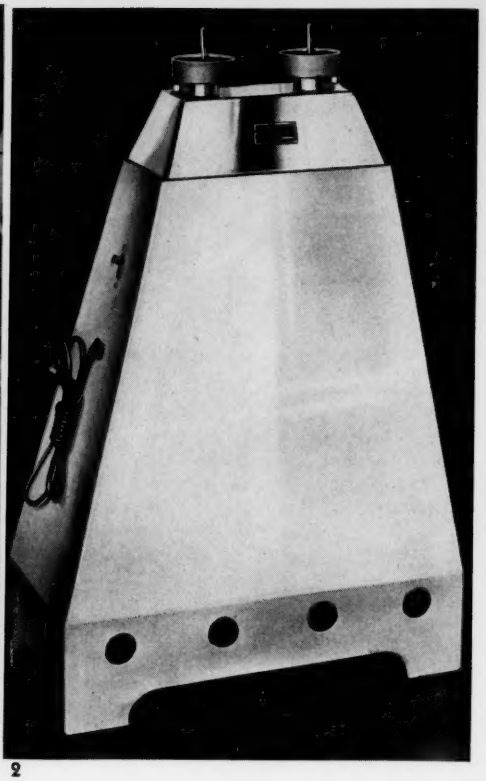
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PACKAGING & BOTTLING EQUIPMENT

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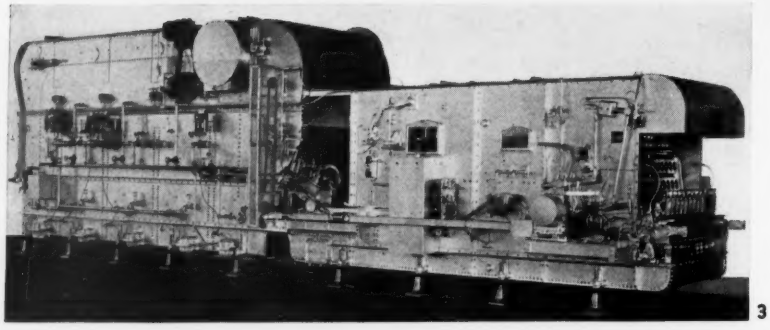
XUM



1



2



3

1. Discharge section of two-story bottle washer and sterilizer. Courtesy Rice & Adams Corp. **2.** Two-tube air cleaner with compressor pump and motor integral with base. Speed 35 to 40 bottles per minute. Courtesy U. S. Bottlers Machinery Co. **3.** Milk bottle washer typical of large equipment for handling returned bottles. Machine carries bottles on continuous conveyor through soaking pits and past washing sprays, brushes and cooling sprays, discharging bottles at far end onto filling machine conveyor. Courtesy Michael Yundt Co.

Bottle Cleaning Equipment

To prevent contamination of their products and to comply with pure food and with health laws, many manufacturers find it necessary to clean bottles prior to use. Those using all new containers desire to remove lint, dust and any glass chips that may enter the container between the time of its manufacture and the time of its use in the packaging plant. Those using a returned bottle—as in the milk and beverage industries—of course find thorough washing and sterilizing of such containers an absolute essential. Cleaning equipment is of three general types: air cleaners, rinsing machines and soaking, rinsing and washing machines.

The two former types are recommended only for the thorough cleaning of new glassware not requiring sterilization at the point of filling. When second-hand or returned bottles are being used, only a thorough soaking and washing in sterilizing solutions, followed by a careful drying, can be recommended.

Air Cleaning

Where glassware comes directly from the factory, cleaning by compressed air has been found satisfactory in numerous plants, particularly provided the glassware has not been exposed—outside of closed shipping containers—to grime or grease.

Air cleaners of both hand operated and automatic types are available. In the non-automatic type, the operator

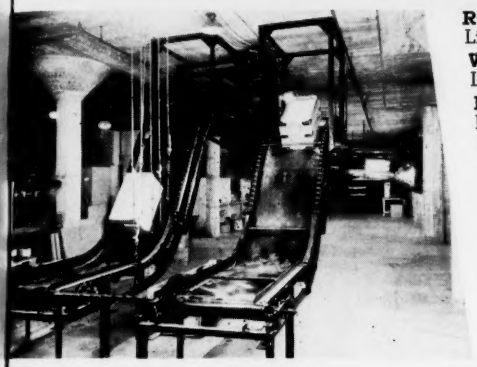
Mathews

CONVEYER COMPANY

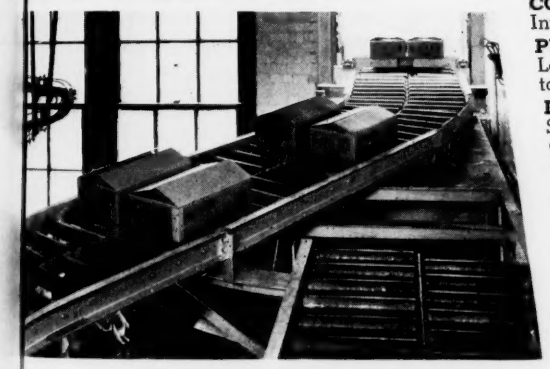
166 Tenth St. Ellwood City, Pa.
Port Hope, Ont., Can. San Francisco, Cal.

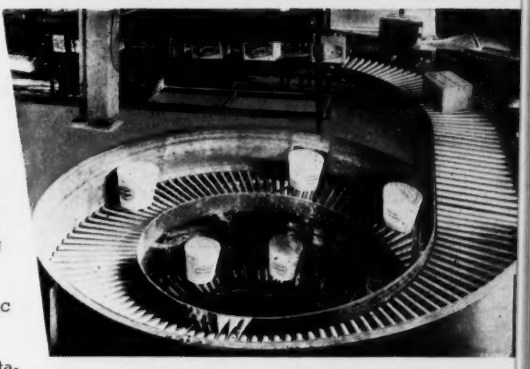
Engineers and Manufacturers of Package Handling Equipment

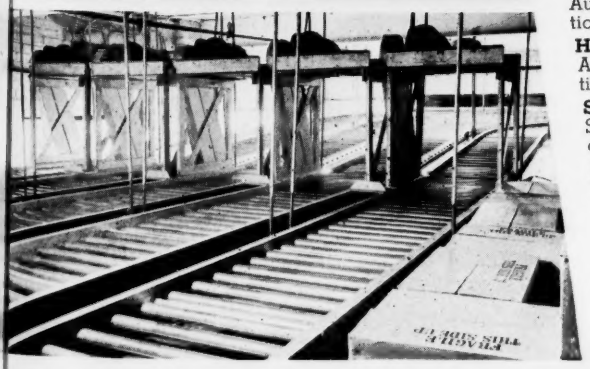
CONVEYER TYPES TO MEET EVERY REQUIREMENT













ROLLER CONVEYERS:
Light, standard, and heavy-duty types.

WHEEL CONVEYERS:
Light, standard, and heavy-duty types.

BELT CONVEYERS:
Roller bed and slider board types, using stitched canvas, solid woven rubber covered, rubber, duck, steel mat, and wire mesh belts. Variable speed drives.

LIVE ROLLER CONVEYERS (Belt Driven)

LIVE ROLLER CONVEYERS (Chain Driven)

PALLET CONVEYERS:
Wood or steel pallets, level and inclined types.

CONTINUOUS APRON CONVEYERS:
Interlocking pallets.

PUSHER BAR CONVEYERS:
Level, inclined, and vertical types. Automatic receive and discharge stations.

DRAG CHAIN CONVEYERS:
Single or multiple strand.

TROLLEY CONVEYERS:
Light, medium, and heavy duty types, incorporating ball bearings or oilless bronze bushings. Bearings may be grease packed or greaseable. Attachments made to suit commodities being handled.

ELEVATING CONVEYERS:
Suspended carriage types. Automatic receive and discharge stations.

HOISTS (Electrical)
Automatic receive and discharge stations.

HOISTS (Pneumatic)
Automatic receive and discharge stations.

SPIRAL CHUTES:
Single and multiple tread, open and enclosed types.

SPIRAL ROLLER CONVEYERS:
Two or three-rail construction with intermediate receive and discharge stations.

PORTABLE CONVEYERS:
Designed to specifications. Adapted to specific requirements.

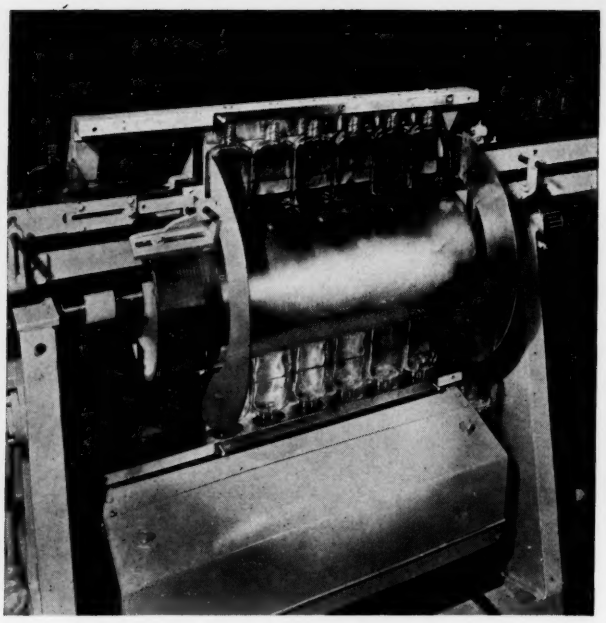
PILE-ELEVATORS:
For piling sacks, bags, bales, bundles, boxes, and cartons.

THE CONTINUOUS FLOW PRINCIPLE OF HANDLING MATERIALS

XUM



4. Semi-automatic air cleaner. Speed 35 to 40 bottles per minute. Courtesy Pneumatic Scale Corp., Ltd.



5. Automatic straight line air cleaner with streamlined cover removed. Courtesy Pneumatic Scale Corp., Ltd.

places two bottles at a time against air tubes, so arranged as to provide a blast of air whenever the pressure of the bottle necks is applied. From 60 to 80 lbs. of compressed air pressure is utilized and dirt, lint and grease are thus literally blown out of the bottle. Such machines can be operated at a speed of from 30 to 40 containers per minute, depending on the skill of the operator and the size of the container.

Automatic machines of various types are also available. In some instances, rotary machines very similar to bottle filling machines are utilized, receiving the bottles directly from a conveyor and cleaning them while in upright position. They are discharged, one by one, back onto the conveyor, by means of a star wheel.

Another type of machine receives a group of bottles from the conveyor onto a barrel-like holding device and then proceeds to invert these bottles over air nozzles. Cleaning is thus accomplished while the bottles are held in inverted position. While one set of bottles is being cleaned, the preceding set, at the opposite side of the drum, is being returned to the conveyor and a third set being received, immediately thereafter, by the drum.

Air cleaning equipment is sometimes incorporated as an integral part of a bottle filling machine.

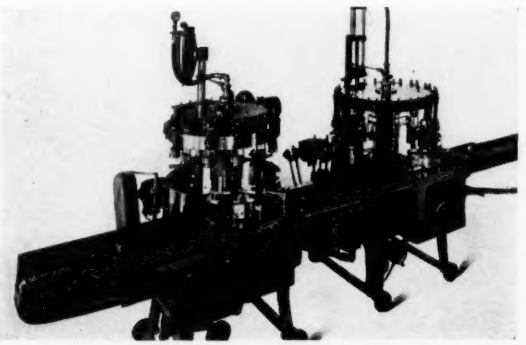
Bottle Rinsers

Bottle rinsers utilize a spray of water—sometimes heated and sometimes including sterilizing solutions, to rinse both the inside and the outside of inverted containers. Some, of the rotary table type, consist of a large number of spouts mounted on a rotary table. The operators invert bottles over these spouts which then pass under a hood where interior and exterior sprays are applied. Machines of essentially similar principle are also manufactured using a straight line conveyor or a chain conveyor, designed to carry one or more rows of bottles through a rinsing hood where both interior and exterior rinsing is performed.

Soaking and Washing Machines

Soaking and washing machines were designed to meet the far more complicated cleaning problems involved in the use of multi-trip containers. Such containers frequently require the removal of an old stained or torn label. They have often been used—while in the field—to hold products ranging from kerosene to fats. They have had opportunity to collect every sort of contamination—germs, dirt, grease and grime—and thus require the most effective form of cleansing and sterilization.

Machines of this sort usually first rinse the bottle to flush out loose dirt, flies, etc., and to pre-heat the bottles for the high temperature solutions in the following proc-



6. Rotary air cleaner used in conjunction with a rotary vacuum bottle filler. Courtesy The Karl Kiefer Machine Co.

XUM

Exact Weight Scales for every weighing operation in Modern Packaging..



SHADOWGRAPH

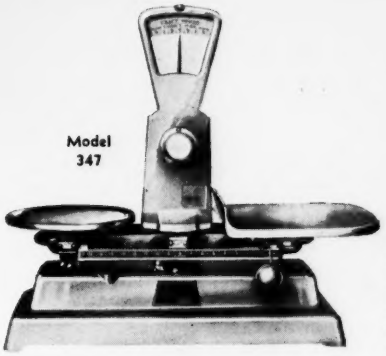
The SHADOWGRAPH is a revolutionary advance in precision weighing. A light ray replaces mechanical indication to allow reduction in working parts thus producing greater accuracy and speed. Noiseless in operation—instantly ready to weigh by plugging into any electrical outlet. Featuring extremely fine sensitivity SHADOWGRAPH is dependable and accurate in any high speed modern packaging operation.

PRODUCTS—Quality pre-determined weight scales for modern packaging; checkweighing, controlling automatics, hand weighing.

EXACT WEIGHT Scales are the acknowledged leaders in the pre-determined weighing field. More than 50,000 corporations and companies in 53 industries from coast to coast use this equipment for checkweighing, controlling automatics and hand weighing on every type of production line in modern packaging.



Model 273



Model 347

Model 347—All purpose EXACT WEIGHT fast production scale, capable of 1/100 lb. accuracy. Handles ideally such commodities as nuts, coffee, tea or any item where fraction ounce overweight means shrinking profits. Capacity—12 lbs.

Model 273—End tower construction completely changes all standards by which modern high speed over and under weight scales are to be judged. Features—Short platter fall which multiplies operating speed and this feature materially reduces scale depreciation—compactness—less space on the bench—fits any production line—uninterrupted straight line production across the scale—heavier construction for added ruggedness. Sensitive to 1/8 oz. Capacity—12 lbs.

Model 1021 (below) is designed for carton, box and can packaging and weighing. Ideal for candy, lard, broken eggs or any product packaged to exact weight. Equipped with a top reading dial for floor or low bench operation. It requires no leveling for uneven floors. Comes with carrying handles for easy transportation in the plant. Sensitive to 1/4 oz. Capacity to 53 lbs.



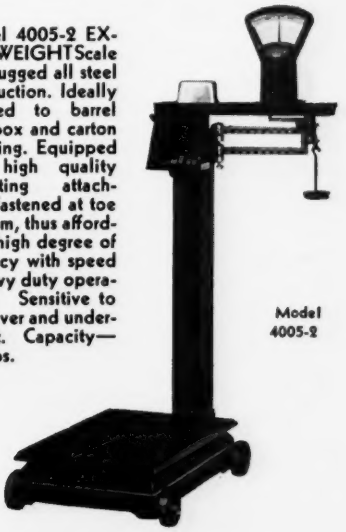
Model 366



Model 1021

Model 366 was designed for packaging operations of wide scope, in average weights. Handles such commodities as corn meal, flour, feed, mashes, beans, rice, sugar, hard candies, nuts and field seeds. For low bench or floor operations. Equipped with top reading dial and dust cover. Sensitive to 1/4 oz. Capacity to 22 lbs.

Model 4005-2 EXACT WEIGHT Scale is of rugged all steel construction. Ideally adapted to barrel bag, box and carton weighing. Equipped with high quality indicating attachment fastened at toe of beam, thus affording a high degree of accuracy with speed in heavy duty operations. Sensitive to 1 oz. over and under-weight. Capacity—500 lbs.

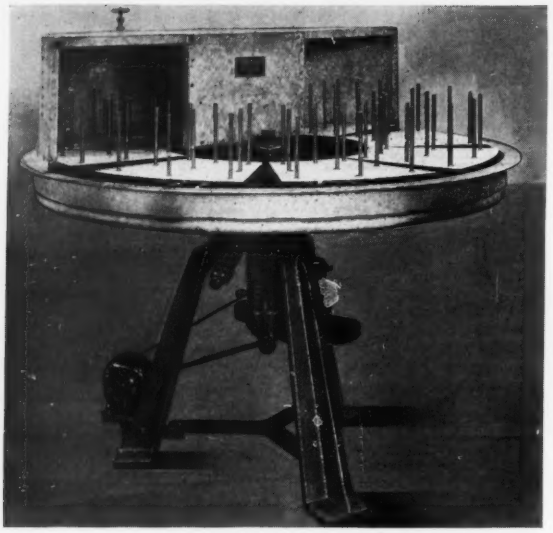


Model 4005-2

THE EXACT WEIGHT SCALE CO.
223 W. Fifth Ave. Columbus, Ohio

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INDUSTRIAL PRECISION SCALES

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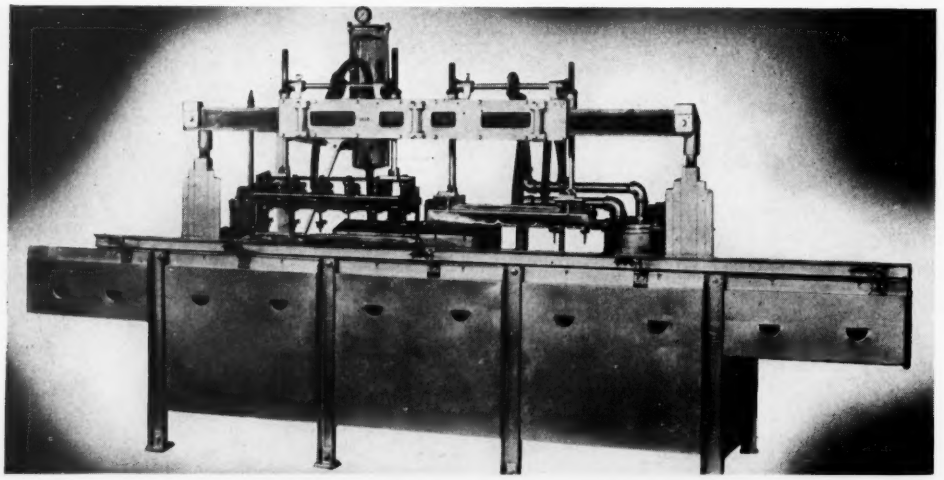


7. Rotary bottle washing machine. Photo courtesy F. J. Stokes Machine Co.

esses. Soaking in hot alkali solutions then follows, to effectively remove labels, adhesives and all forms of dirt deposits. Frequently brushing devices for both interior and exterior of bottles are included as an integral part of the machine. The final step consists of rinsing of both interior and exterior, to remove all cleaning solutions and then draining and, in some instances, drying.

Machines vary in size to meet varying production needs and use chain belts equipped to hold anywhere from one to twelve or more bottles per link. Feed and discharge may be automatic and directly off a conveyor, semi-automatic by means of a magazine feed, or hand fed in some instances.

Production speeds vary with the width of the machine i.e., the number of bottles held per link of chain or belt, and with the size and type of container. Thus an essentially identical machine designed with a four-bottle-wide belt will have a capacity of from 24 to 32 bottles per minute, whereas an eight-bottle-wide belt will have a capacity of from 48 to 64 bottles per minute.



8. Straight line air cleaner combined with vacuum filler. Photo courtesy Elgin Manufacturing Co.



9. Large capacity bottle rinsing and washing machine. Note trays permitting use for wide range of bottle sizes. Photo courtesy of the U. S. Bottlers Machinery Co.

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BOSTON-BLISS-LATHAM

WIRE STITCHING MACHINES

FOR ASSEMBLING AND SEALING

CORRUGATED AND FIBRE SHIPPING CASES

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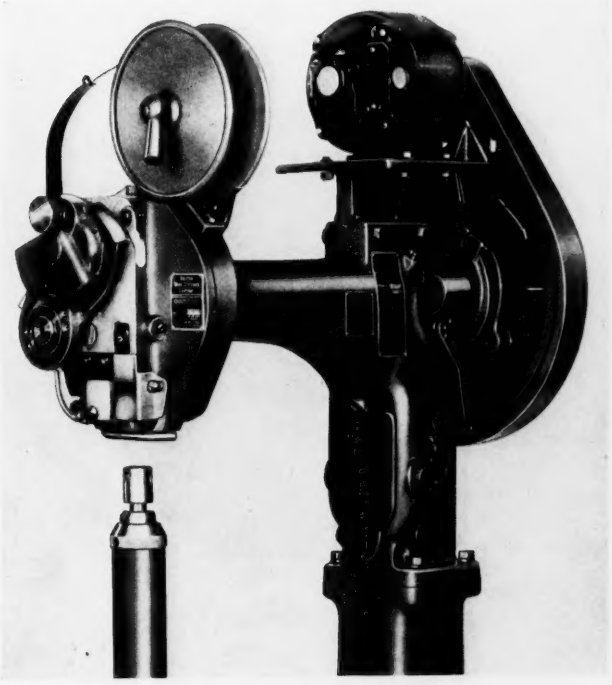
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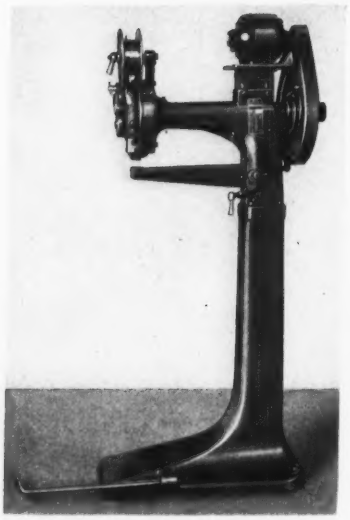
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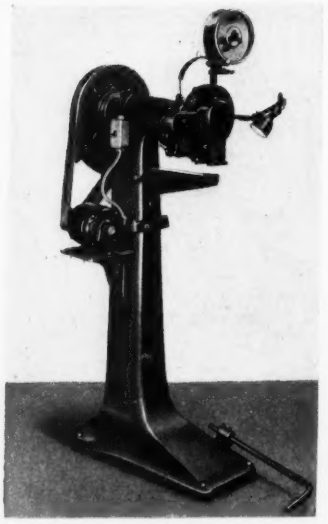


BOX STITCHERS



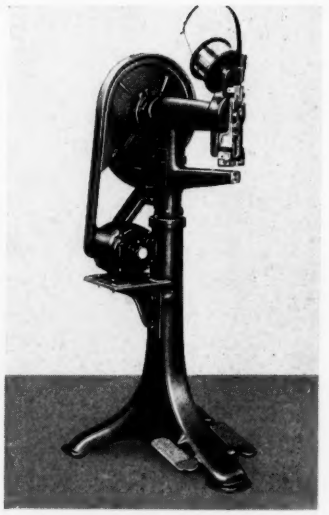
Bliss Heavy Duty Box Stitcher

Built for heavy duty work on all grades and thicknesses of boxboard used for corrugated and solid fibre shipping containers; also suitable for telescope containers, suit boxes, set-up boxes, folding boxes, cracker caddies, display boxes, etc.
Clearance between the stitcher head and clinching anvil, $1^{9}/_{8}$".
May be equipped with tables or gauges.
Bliss 90° or 45° Stitcher Head; uses standard ribbon and Hybar wires, also other flat and round sizes.
Throat lengths—15", 25" or 33" and longer.



Improved Latham No. 34 Box Stitcher

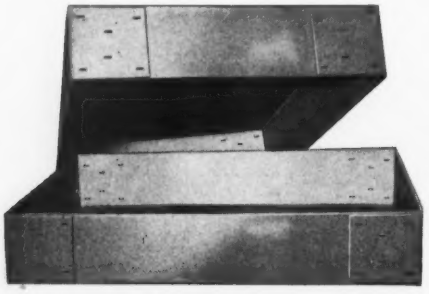
This new Latham is a moderately priced machine for stitching the regular run of boxes, containers and bags used by mail order, clothing and metal trades manufacturers, and similar industries. Working parts are stronger and heavier than those of previous models, and concealed for protection against dust and grit.
Uses .017 or .020 ribbon wire; No. 1 or No. 2 Hybar wire. Crown of stitch, $^{7}/_{16}$". Capacity .360 inch. Speed up to 300 Stitches per minute. $^{1}/_{4}$ HP Motor. Throat length, 12".



Boston No. 10 Box Stitcher

A light model machine equipped with the Boston No. 26 Narrow Stitcher Head. Adapted for light stitching operations, either on boxes or flat work such as bag sealing and attaching articles to cards.
Wire used, 21 × 25 flat or 21 to 25 or 25 to 28 round. Work up to $^{1}/_{4}$" in thickness may be stitched. Crowns may be furnished for $^{3}/_{8}$" or $^{1}/_{2}$".
Machine may be equipped with standard table. Distance from stitch to inside edge of frame is 10 inches.

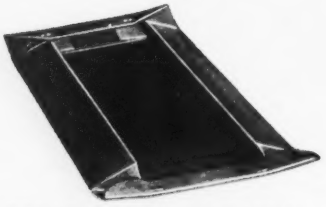
EXAMPLES OF BOX STITCHING



Telescope Box



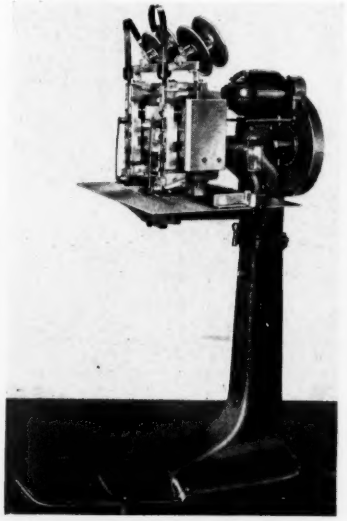
Display Box, Stitched on Box Stitcher



Folding Suit Box, Stitched on Box Stitcher



Shopping Bag, Stitched on Box Stitcher



Boston Multiple Head Stitcher

Uses No. 15 Type Heavy Duty Boston Stitcher Head. Heads are adjustable sidewise, with a minimum spacing of 3" from center to center, and maximum spacing up to 16". Uses $^{1}/_{2}$" crown stitch, and stitches work up to $^{1}/_{2}$" in thickness. Drives all sizes of ribbon and Hybar wire, also other flat and round sizes.
Used for stitching suit boxes, cartons and other types of folding or set-up boxes, and for any other stitching requiring two or more stitches uniformly spaced.
Available with solid clincher or moving clincher as ordered.

DEXTER FOLDER COMPANY
330 West 42nd Street, New York, N. Y.

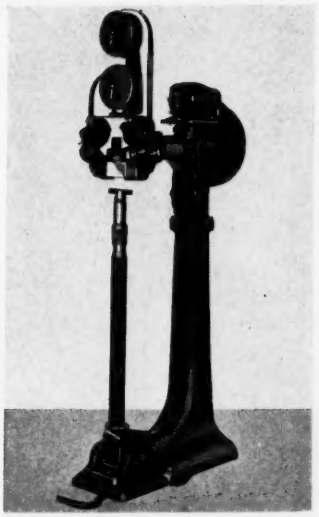
XUM

BOTTOM STITCHERS



Bliss Bottom Stitcher

Equipped with Bliss Heavy Duty stitcher head. Recommended for stitching the bottoms of regular slotted containers, Bliss Collapsible boxes and many other purposes, where maximum production is required.
The rugged construction of the Bliss Bottom Stitcher assures long service on heavy duty work.
Built in two sizes: 15″ or 25″ throat.



Bliss Duplex Bottom Stitcher

Drives two stitches simultaneously, enabling a production of 50% to 60% greater than is possible with single head stitchers, without increasing labor cost. One operator can stitch 6 to 12 boxes per minute. With two operators as many as 18 boxes per minute can be stitched.
Built in one size with 15″ throat length.



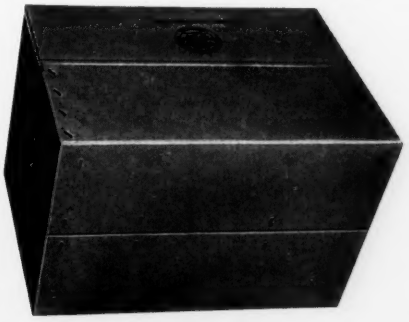
Bliss Box and Bottom Stitcher

This is a general purpose machine popular in plants using both regular slotted containers and various styles of telescope and Bliss Boxes. Boxes can be assembled on box arm; regular slotted containers can be bottom stitched on post. Change can be made in one minute.
Built in two sizes, with 15″ and 25″ throat, respectively.

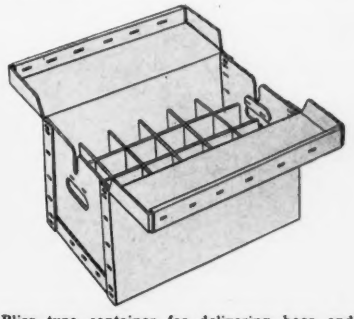


Improved Latham No. 34-B Bottom Stitcher

A moderately priced stitcher for bottom stitching the lighter grades of corrugated and solid fibre shipping containers in all the usual sizes. Heavy duty working parts are larger and stronger than those of previous Latham models. Formers and drivers are readily removable and reversible. Stitcher head is removable as a unit. Reliable ring type clutch.
Uses .017 or .020 ribbon wire; No. 1 or No. 2 Hybar wire. Crown of stitch, $^{7}/_{16}$ inch. Capacity .360 inch. Speed up to 300 stitches per minute. $^{1}/_{4}$ HP motor.



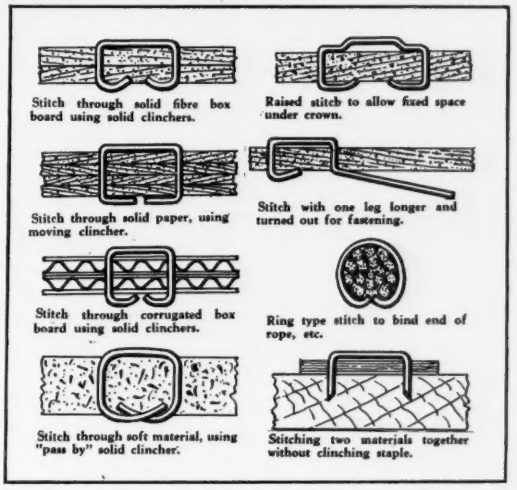
Regular slotted container, showing bottom stitched on Bottom Stitcher



Bliss type container for delivering beer and other bottled beverages. Assembled on Bliss Box Stitcher or Bliss Box and Bottom Stitcher

TYPES OF WIRE STITCHING

These are some of the types of wire stitching that come within the range of the Bliss Heavy Duty Stitcher Head. Correspondence is solicited regarding any other types of stitches your work may require.



XUM

TOP STITCHERS



Bliss Power Lift Top Stitcher

Recommended where large numbers of heavy containers are used and is especially suitable for conveyor installations, as it is adjustable to coincide with conveyor line.

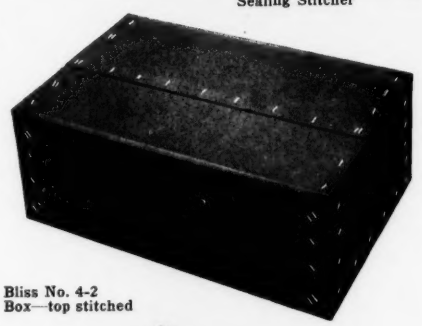
Equipped with a power driven work table. Table automatically stops in just right position for top stitching. One motor operates power lift and stitcher. A steel work table equipped with steel ball bearings permits free movement of container while being stitched.

Equipped with Bliss Heavy Duty Stitcher Head.

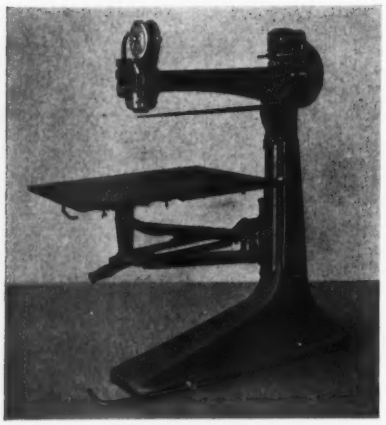
Built in one size, with 33″ throat length. Table size 26″ × 40″.



Regular Slotted Container, showing top stitched on Top Sealing Stitcher



Bliss No. 4-2 Box—top stitched



Bliss Quick Lift Top Stitcher

Used for wire stitching the tops of regular slotted containers and Bliss Boxes.

The steel table is supported by the Bliss quick lift mechanism which is positive in action and instantly adjustable up and down. Raising and lowering of table is facilitated by the use of counterbalancing steel springs.

Equipped with Bliss Heavy Duty Stitcher Head.

Built in three throat lengths—15″, 25″ and 33″, accommodating boxes up to 33″ long, 33″ wide and 28″ deep.

Table sizes; 26″ × 30″, 26″ × 40″, and 30″ × 40″.



Bliss No. 4 Box—top stitched

LATHAM CORNER STAY STITCHER

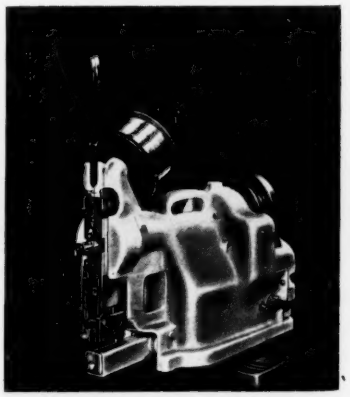


The Latham Corner Stay Stitcher places a right angle stitch around corner of box.

The machine is used for hardware packing boxes, cracker caddy covers and boxes for other purposes; also for strengthening the higher grade set-up boxes which are later covered with paper. Straight cut-off or pointed stitch is optional.

Distance from stitch to inside of frame is 12″. Wire used is .017 to .020 ribbon, or No. 20 × No. 25 flat.

BOSTON PORTABLE BENCH STITCHER



With this new Boston PortableBenchStitcher you will often find it more convenient to take the machine to the work to be stitched, rather than carry the work to the stitcher. The machine is intended for light stitching operations, such as sealing filled bags by wire stitching, attaching articles to cards, and making small boxes.

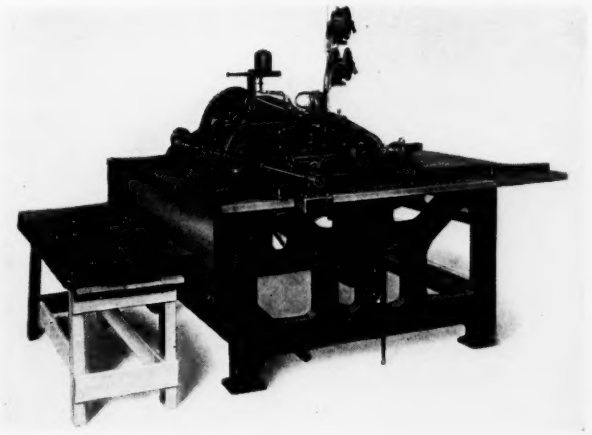
The Portable is readily carried from one location to another, attached to light socket and put into operation without delay. It is electrically tripped by means of solenoid operated by a foot pedal.

Stitches work up to 1/4″, and has throat length of 4″. Uses No. 2D Stitcher head for 25 to 30 round wire. Crown, 3/8″ or 1/2″ as ordered. Motor, 1/20 HP, 110 V, AC, 60 cycle.

DEXTER FOLDER COMPANY
330 West 42nd Street, New York, N. Y.

REGULAR SLOTTED CONTAINER STITCHERS

Latham Automatic RSC Stitcher



This stitcher is used in large box making factories where high production, large volume, uniform spacing and maximum efficiency are necessary. Recommended for corrugated and solid fibre boxes and is particularly suitable for handling the seasonal demands for cases used for shipping canned goods, food products, bottled goods, etc.

Production varies from 1200 to 2500 containers per hour.

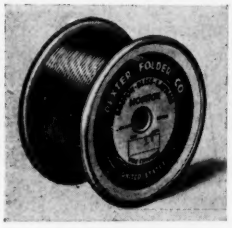
Drives a single or double row of stitches, or a single row of stitches with tie stitches at each end, at speeds up to 360 revolutions per minute. The stitch is driven at a 45 degree angle.

Feed table as shown in illustration with work on stand is used with only one operator, who picks up the blanks, folds them and lays them in position for automatic feeding. Wing of table may be raised in position for handling large blanks, in which case two operators are used, one folding the blanks and the other feeding.



Regular Slotted Container, side stitched on RSC Stitcher

Parts, Wire and Mechanical Service



All Dexter Offices carry replacement parts for Bliss, Boston and Latham Wire Stitching Machines, and are prepared to render prompt service on any of these stitchers.

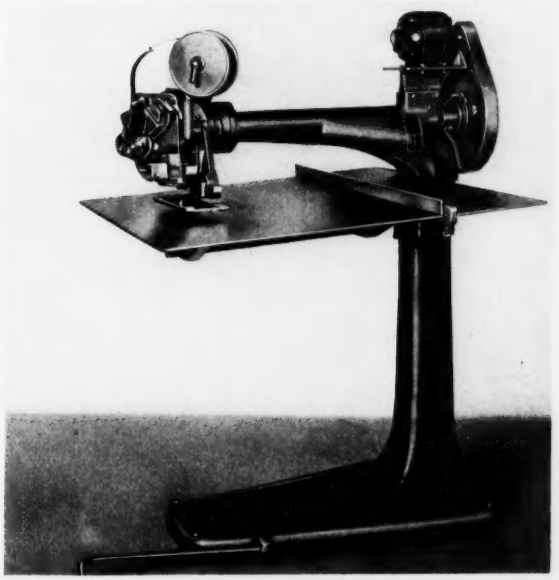
A stock of all the usual sizes of box stay and bookbinders' wire is available at all offices for prompt shipment.

Your orders for parts, service, rebuilding and wire are solicited.

Stitchers for Special Purposes

Wire Stitching Machines are adapted to many special uses—such as fastening various articles to cards, Belt Stitching, Milk Bottle Caps, Pocket Books, Luggage, Toys and other Products. Correspondence is solicited on any stitching problem you may have.

Bliss Diagonal Head RSC Stitcher



Drives the stitch at an angle of 45 degrees to the manufacturer's seam. Is a particularly desirable machine for stitching corrugated or solid fibre containers.

Operates at speeds of 300 to 400 stitches per minute. As many as 10,000 containers with five stitches are frequently produced in a day's run.

Equipped with the Heavy Duty Stitcher Head. Clincher arm does not rest on box blank at moment of stitching, which feature eliminates crushing of corrugations or denting the board. A parallel gauge table may be furnished. Gauge is adjusted in one movement and is always in correct parallel position.

Equipped with mechanical operating pedal or with electric solenoid control as ordered.

Built in 32″, 38″ and 48″ throat lengths.

Solenoid Control for Bliss Stitchers

A recent improvement in Bliss Stitchers is the substitution of electrical for manual control. In the manual type the clutch is engaged and released by a foot pedal mechanically connected. The electrical control employs a movable floor switch actuated by slight pressure of the operator's foot, and the clutch is engaged by the action of a solenoid mounted on the frame of the stitcher. When the foot is removed from the switch the solenoid ceases to act, and a spring releases the clutch.

Among the advantages of this type of control are:

1. The foot switch may be placed in any desired position which is advantageous when large blanks are being stitched, or when the operator works in seated position.

2. The operator's foot does not have to be raised as high from the floor, and the foot pressure required is less than where manual control is employed.

3. The operation of the clutch is more positive, and there is less chance for repeating than with the manual trip.

This type of control is optional on all Bliss Stitchers at a small additional cost.

XUM

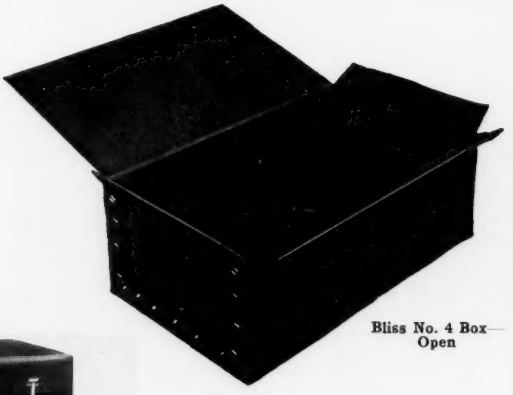
TYPES OF BLISS BOXES

The most popular types of Bliss Boxes are the No. 2, No. 4 and No. 4-2 models.



No. 2 Bliss Box—Open

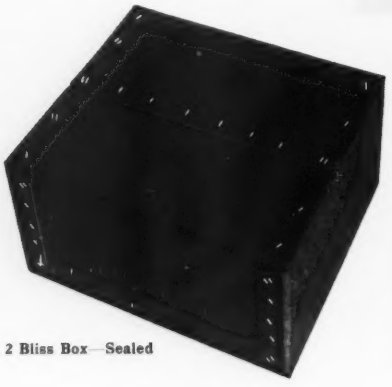
When No. 2 Box is assembled, the flanges form a double thickness of board on all vertical seams on the sides, and on horizontal seams at each end of the box.



Bliss No. 4 Box—Open

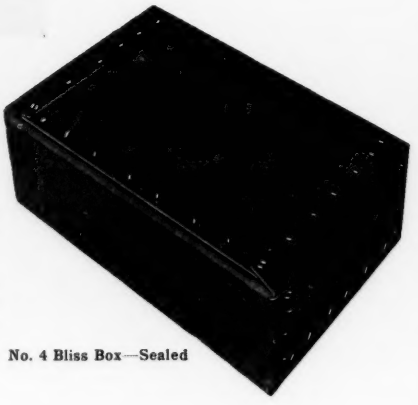
When No. 4 box is assembled the three flanges form a double thickness on the ends, which gives added protection for canned goods and other commodities where an end thrust of the contents is to be guarded against.





No. 2 Bliss Box—Sealed

This New Bliss Wire-LockSeal Box may be sealed, opened for inspection and re-sealed without damage to the box.
Wire stitches with arched crown attached to top panel and body of box provide means for locking the cover with wire or strips of metal which may be sealed with lead seals. Such seals are readily broken without damage to the box and after inspection or repacking new seals may be applied. This box, with arched wire seals attached, is manufactured by leading container companies.



No. 4 Bliss Box—Sealed

BLISS BOXES ARE THE SAFEST SHIPPING CONTAINERS

Packing goods in BLISS BOXES assures the manufacturer of the greatest possible margin of safety to his goods while stored or in transit. The three-piece construction, with all vertical seams reinforced, makes the BLISS BOX the strongest corrugated or solid fibre container obtainable.
The special method of construction of the Bliss Box offers greatly increased resistance to all types of stresses, whether from within or without the box.

The various types of Bliss Boxes comply with all of the requirements of Rule 41 of the Consolidated Freight Classification.

Low in Cost

Bliss Boxes are economical because they contain no waste stock. The saving in material and freight charges reduces the total cost an average of 10% and in some instances as much as 20% when compared with other types of fibre containers. The extra strength of the BLISS BOX also often permits the use of lighter board which effects an additional saving.

Easy to Obtain, Assemble and Seal

Blanks for BLISS BOXES are manufactured under license by nearly all leading board mills and box factories in the United States and Canada and are therefore as readily obtainable as other types of shipping containers. A complete list of licensed manufacturers will be furnished on request.

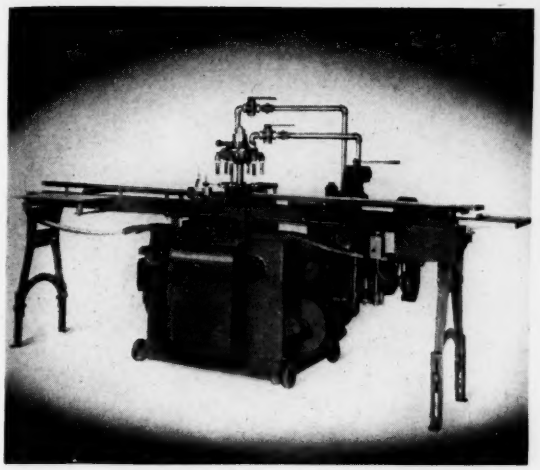
Equipment for easy, convenient assembling and sealing of BLISS BOXES is furnished by the Dexter Folder Company, a sixty-year-old concern, with sales and service offices in New York, Chicago, Philadelphia, Boston, Cincinnati, St. Louis, San Francisco, Los Angeles and Seattle.

In addition to the boxes illustrated is the No. 4-2 box which is doubly protected on all four corners and top and bottom of each end. It is the strongest Bliss Box and is desirable for carrying heavy loads, or where extreme rigidity is required for protection of contents.

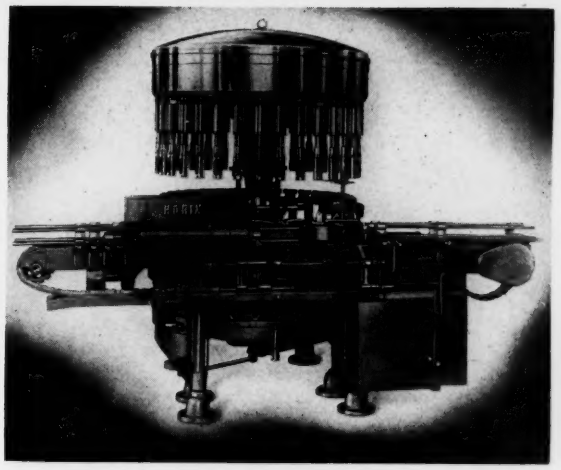
Dexter men who have a wide knowledge of shipping requirements for many products will be pleased to discuss the advantages of Bliss Boxes and equipment for assembling and sealing them, at your request and convenience.

DEXTER FOLDER COMPANY
330 West 42nd Street, New York

XUM



1. Constant volume measuring filler, continuous motion rotary type. Speed up to 150 per minute. Courtesy The Karl Kiefer Machine Co.



2. 32-valve automatic feed and discharge rotary filler. Capacity up to 150 qts. per minute. Photo courtesy of Horix Manufacturing Co.

Filling Liquids and Pastes

by P. R. FECHHEIMER*

Equipment for filling containers with liquids can be divided into two general classifications:

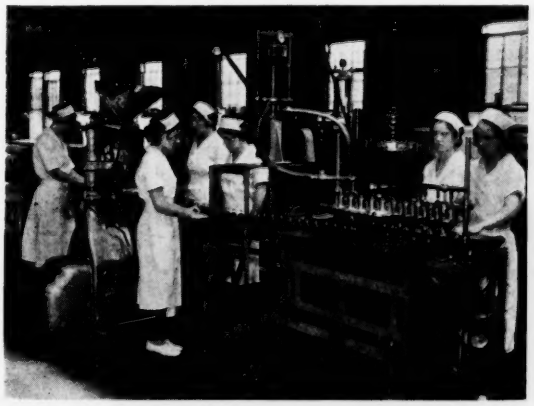
1. Metering machines—which deliver to the container:
   (a) A measured volume.
   (b) A measured weight.
2. Constant level machines—which fill the containers to a uniform height as measured from:
   (a) The bottom of the container to the liquid level.
   (b) The top of the container to the liquid level.

* The Karl Kiefer Machine Co.

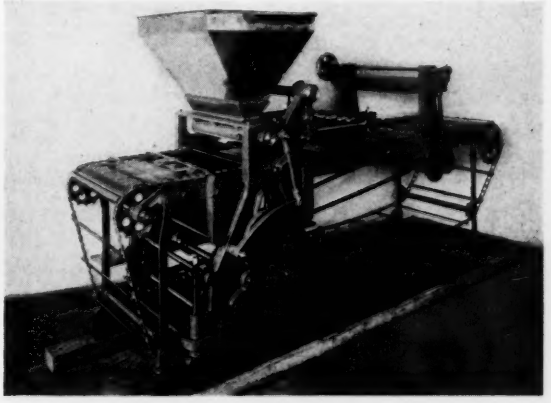
Metering machines are used principally for viscous or semi-liquid products. The constant volume type consists basically of an accurate pump of either piston or rotary impellers and is obtainable as hand operated, semi-automatic or full automatic equipment.

The hand operated units are generally constructed with a piston pump, a hopper in which is loaded a batch of the material to be filled and a spout to which the operator presents the containers in time with the stroke of the piston. On some products, it is necessary to keep the tip of the spout immersed in the fluid as it is ejected into the container, thus eliminating air pockets. In the hand operated machines, the operator is relied upon to lower

3. Straight line semi-automatic vacuum filler. Courtesy U. S. Bottlers Machinery Co.

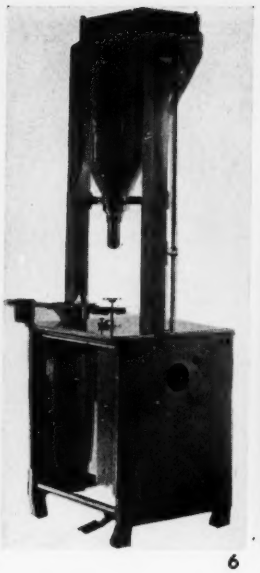


4. Plunger type filler for preserves, jellies, etc. Courtesy The Filler Machine Co., Inc.

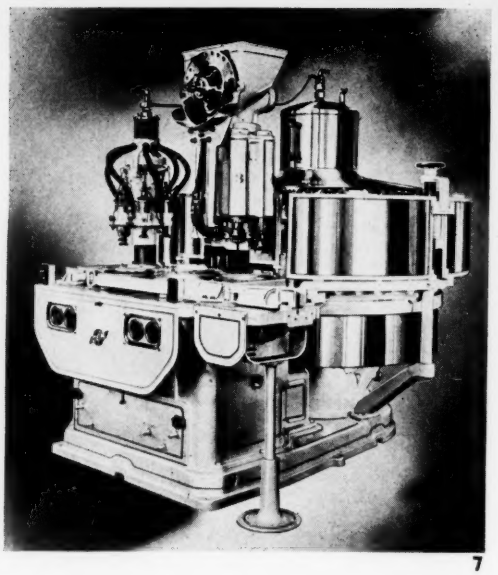




5



6



7

5. General purpose filler for liquids, semi-liquids and pastes. Courtesy F. J. Stokes Machine Co. **6.** Auger fed filler for pastes and viscous materials. Speed 10 to 20 per minute. Container capacity up to 18 in. in height. Courtesy Stokes & Smith Co. **7.** Rotary combination syruper, filler and crowner for carbonated beverages. Courtesy Crown Cork & Seal Co.

the container away at the proper speed so as to accomplish this end.

Semi-automatic and full automatic machines of the piston type operate on a similar principle, except that two or more piston pumps are utilized along with a conveyor which intermittently carries the containers forward. A cam operated table raises the containers at the filling station and lowers them away in timed relationship with the piston stroke. The containers can be automatically discharged onto a conveyor for subsequent packaging operations.

Machines are available of the full automatic constant motion rotary type, which eliminate the disadvantageous features of intermittent motion. This type of equipment can be hand fed by an operator placing empty containers on the trays of the machine. This construction is usually recommended where there is a wide variety of shapes and sizes to be handled. These machines can also be automatically fed and are well adapted to conveyor line operation where there are previous and subsequent operations to be performed. For this purpose, a star wheel is utilized and the containers are removed from the conveyor thereby and automatically returned to the conveyor after filling is completed.

There are two general constructions of the rotary type machine. In one there is a series of piston pumps mounted above and rotating with the containers, so that each stroke of a piston fills the container below it. In the other there is a pump of the rotary impeller or piston type, depending upon the product to be handled, and a valve head arranged so that the entire discharge from the pump is ejected into one, and only one, container at a time. In the past two years, this type of equipment has been greatly improved so as to give greater speed, cleaner filling and a wide capacity range with minimum change-over time. There have also been added no jar—no fill and other safety devices, so as to render the equipment fool-proof. The rotary impeller pump has the distinct advantage of a constant velocity of material flowing through it in one direction, so as to minimize its wear and thereby indefinitely hold its accuracy. The result is remarkably precise filling!

Constant weight measuring equipment contains a scale as an integral part of the machine. As the container is filled to a point where it is equally as heavy as a predetermined weight placed on the other platform, the balancing of the scale causes the filling valve to be tripped and the flow then stopped. These units are principally of the hand operated type and generally give no greater speed than an operator can obtain with a hose with nozzle-valve, but offer the distinct advantage of clean and accurate filling.

The constant level equipment is principally used for light, free-flowing liquids. The siphon filler was the earliest design in this category and is still used for some hand operated units. In these machines, the container is filled until the liquid level therein is the same as that in the float controlled supply tank. Its disadvantage lies in the fact that as the two levels approach one another, flow becomes progressively slower, so that high speed production is impossible. There is, however, no overflow to be handled with this method.

Direct pressure machines require that the neck of the container be sealed, usually with a rubber stopper through which passes the filling stem. This stem contains both liquid and air passages so that, as the product flows through under a gravity head pressure which may vary between three and fifteen feet, the air is permitted to escape. When the container is filled, the air escapes by the passage provided in the filling tube, the liquid

XUM

FOODS · DRUGS · COSMETICS · TOILETRIES · CERAMICS · HARDWARE · Etc.

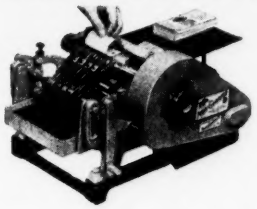
Labeling

Bottles · Jars · Flasks · Ampules · Products · Boxes · Packages

Every TYPE OF LABEL APPLYING:

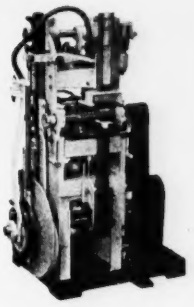
AT LESS COST
WITH LESS LABOR
WITH FINER APPEARANCE !

• FOR EFFICIENT HAND LABELING—



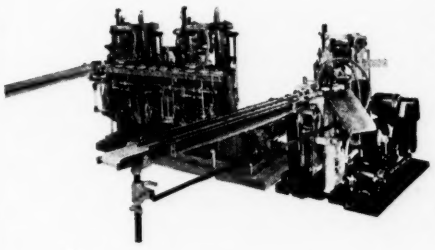
Exclusive ***basic*** *features are involved in the Labelrite method. Registry is exact because it is vacuum-tight; soiling and bottle wiping are* ***out,*** *because of the tissue-thin film of adhesive evenly applied. Labeling is blister-free.*

The famous PONY LABELRITE (at right) handles an astonishing range of articles, sizes and shapes, using either paper or foil labels, applied on flat, curved or recessed areas. Speeds up to 60 a minute. More than 350 of these dollar-saving units have been sold in the past two years.



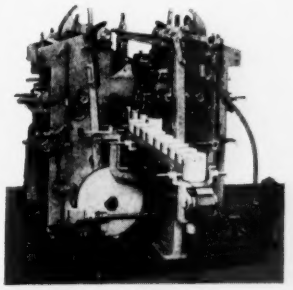
The *Table Gummer*, built to give you years of trouble-free service, does over-all gluing, has micro adjustment glue control, and self cleaning feature. Quiet and efficient.

• FULLY AUTOMATIC LABELRITES—

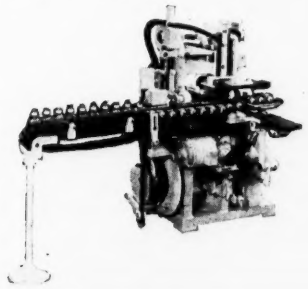


(At left) The *"Tandem" Pony*, conveyor fed, labels both sides of Excello ribbon reels for Freydberg Bros., at 120 per minute. The single unit with special turret for top and bottom labeling of two items simultaneously; 120 per minute for E. K. Plumly, Philadelphia, Pa.

(At right) The impressive *Duplex Labelrite*, used by Harriet Hubbard Ayer for applying a label to exactly registered opposite sides of their products at 120 per minute.



The *Labelrite*—straight line operation—labeling 120 Mistol jars a minute for Standard Oil.



Write for Descriptive Catalog!

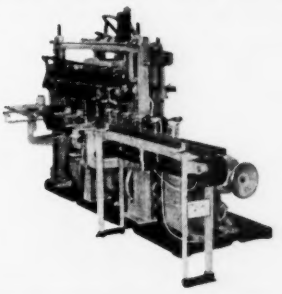
NEW JERSEY MACHINE CORPORATION

1600 Willow Ave..
HOBOKEN ~ NEW JERSEY

Chicago Office: **549 W. Washington Blvd.**

Service and Sales Representatives in Principal Cities

(Below) Labelrite model which handles 60 to 70 or up to 120 jars or bottles per minute

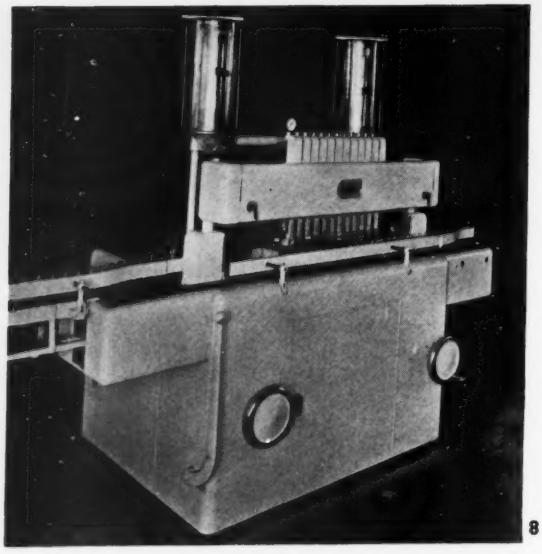




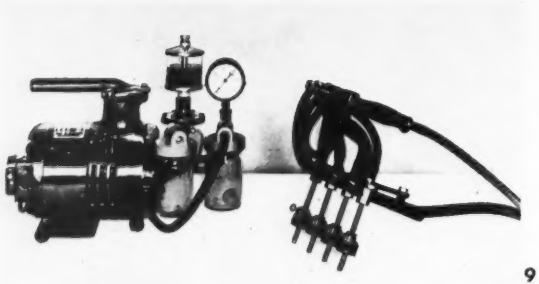
~ and The MOTOAIR PUMP!

VACUUM, PRESSURE, or both is the service offered by the *Motoair*—built in one integral unit, with its own visible oiling system. Made in a range of sizes for use on packaging, filling, printing machines or other individual requirements. Write for comprehensive catalog!

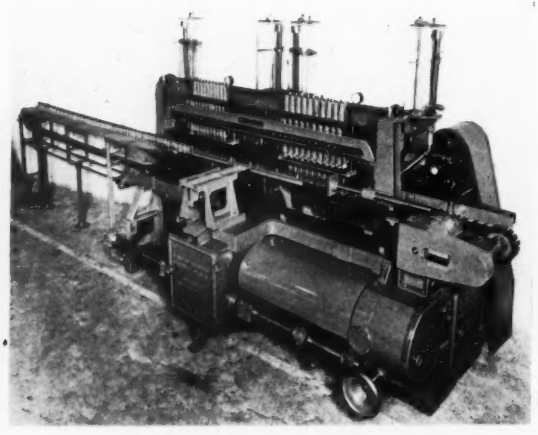
XUM



8



9



10

8. Automatic bottle filler for small containers. Speed up to 90 units per minute. Built-in safety control shuts off machine if next unit in line should stop. Courtesy Pneumatic Scale Corp., Ltd. **9.** Portable vacuum type filling machine equipped with four valve filling heads. Courtesy Horix Manufacturing Co. **10.** Double purpose filler—actually two fillers on a single line, permitting shut down of one for product washout without complete shut down of filling, capping and sealing line. Courtesy Pneumatic Scale Corp., Ltd.

then begins flowing out through that passage, but, since the opening is small, it runs at a greatly reduced speed. This type of equipment is faster than the siphon units and is obtainable in all sizes from hand operated to full automatic. It has, however, the disadvantage that it will fill cracked or chipped bottles and will also usually permit some drip from the filling tubes. In the food field it is widely used because of its ease of cleaning.

An anti-dripping or suck-back device is now available on some machines, which automatically draws the material into the nozzle at the end of each fill and thereby prevents the material from dripping on the edge of the containers or the machine.

Some of these difficulties can be eliminated by the use of a variant of the direct pressure construction known as the "gravity vacuum." In this design the supply tank, mounted above the filling tubes, is kept under vacuum, so that vacuum must be created in the container before the liquid can flow into it by gravity.

In full automatic equipment, the straight vacuum principle is frequently used. In this construction, the float controlled supply tank is mounted below the filling tubes. The containers are sealed, as in the direct pressure units and the air withdrawn from them. The reduced pressure thus produced causes the liquid to be drawn into the containers, the overflow going out through the air tubes just as in the pressure machines. The liquid is separated from the air by an automatic trap, the liquid being returned to the supply tank and the air going out through the vacuum pump. These machines are available in all sizes from hand operated to full automatic and are capable of exceedingly high speed operation and extremely accurate filling without drip or spill and, most important, will not fill defective containers.

Into full automatic liquid filling equipment, there have been incorporated, in the last few years, such safety devices which make for smooth, top speed operation with a minimum of stoppage. Machines have devices guaranteeing protection against damages otherwise resulting from carelessness on the part of the operator or from choke-neck or mis-shapen containers, or even the stopping of other machines in the line.

Operating speeds of filling machines of the automatic varieties have been substantially speeded up during the past few years, machines now in operation in some plants working at speeds of as high as 300 14-oz. bottles per minute. Of course, speed—while of great importance—is but one of a number of considerations by which a filler should be judged. Among other important factors are ease of adjustability and ease of cleaning. Machines for foods and chemicals are often made with stainless steels or other reaction-resisting materials on all parts coming into contact with the material being filled.

Semi-automatic units are generally of the straight line type through which the containers are advanced intermittently. Full automatic equipment of both the straight line and rotary types is obtainable.

XUM

HORIX MANUFACTURING CO.

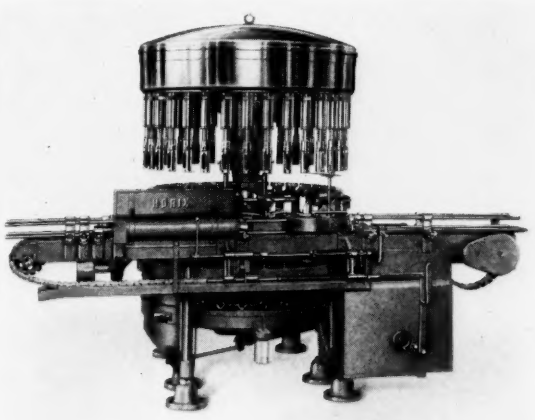
PITTSBURGH (4), PA.

Manufacturers of HORIX, HALLER, and BERGMANN Filling and Conveying Equipment

PRODUCTS HANDLED

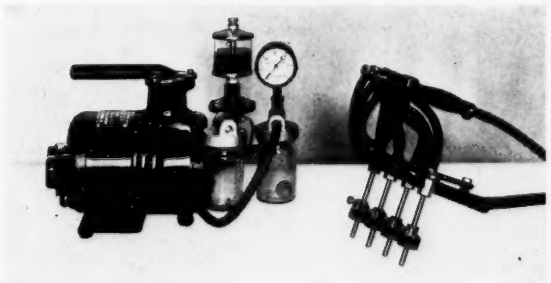
Whiskey	Bluing	Medicines	Chili Sauce
Wine	Catsup	Extracts	Tomato Pulp
Liqueurs	Vinegar	Drugs	Ice Cream
Gin	Syrup	Insecticides	Cottage Cheese
Water	Brine	Fruit Juices	Sour Cream

AUTOMATIC ROTARY FILLERS



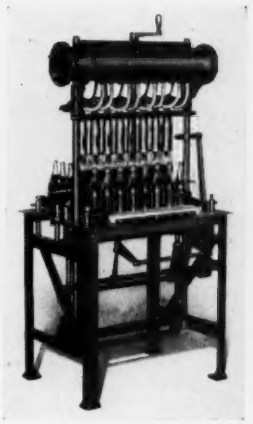
Suitable for plants requiring maximum continuous speed with minimum labor. Feed, filling and discharge are completely automatic. Automatic safeties prevent damage and lost time due to defective containers. Bottle Fillers available in 7, 9, 14, 18, 20, 24, 28, and 32-valve sizes will fill all types of containers, up to 400 a minute. Can Fillers are built with 6, 10, 12 or 18 valves to suit special requirements, filling soups, fruit juices, etc., and syruping or saucing beans, spaghetti, etc., at speeds up to 250 a minute. Operate with all standard washers or closing machines. Quickly adjusted to different sizes of containers. Fill uniformly, without drip or waste. Easily dis-assembled for cleaning or adjusting. Sturdily constructed to insure dependability and long life. Can be operated by unskilled labor.

PORTABLE VACUUM FILLER

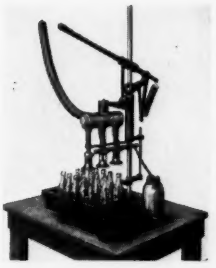


A simple, easily-operated machine of wide adaptability. Consists of compact motor-pump unit, with built-in switch; aluminum filling head, with quickly adjustable valves; over-flow jar; necessary hose connections. Motor can be attached to any light socket. Filling head balanced to minimize fatigue. Corrosion-resisting contact parts, easily cleaned, furnished to suit requirements.

MODEL NV STRAIGHT-LINE FILLER



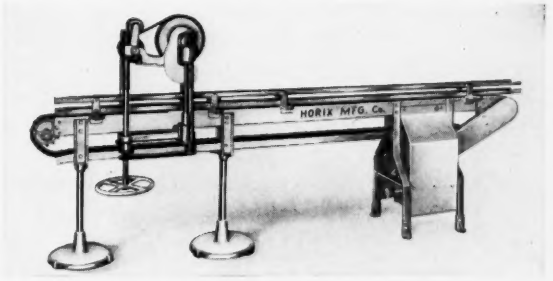
Ideal for filling small lots of different products into a variety of containers. Handles any shape or size of bottle from 4 oz. to1 gal. Change from one size container to another is quickly and easily made. Empty bottles are fed by hand. Fills 4 to 12 bottles at a time, depending on their size. Whiskey can be filled at rate of 45 a minute. Filled bottles can be discharged onto a moving conveyor. Does not require expert mechanics for satisfactory operation. Exclusive Gravity-Vacuum System prevents loss due to defective bottles. All parts accessible for cleaning. Corrosion-resisting contact parts can be supplied.



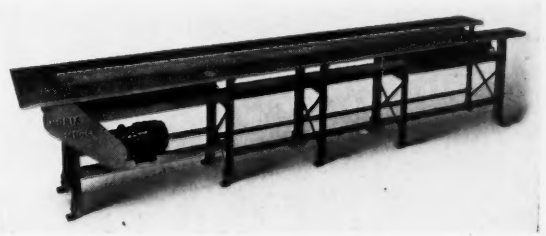
BENCH-TYPE FILLERS

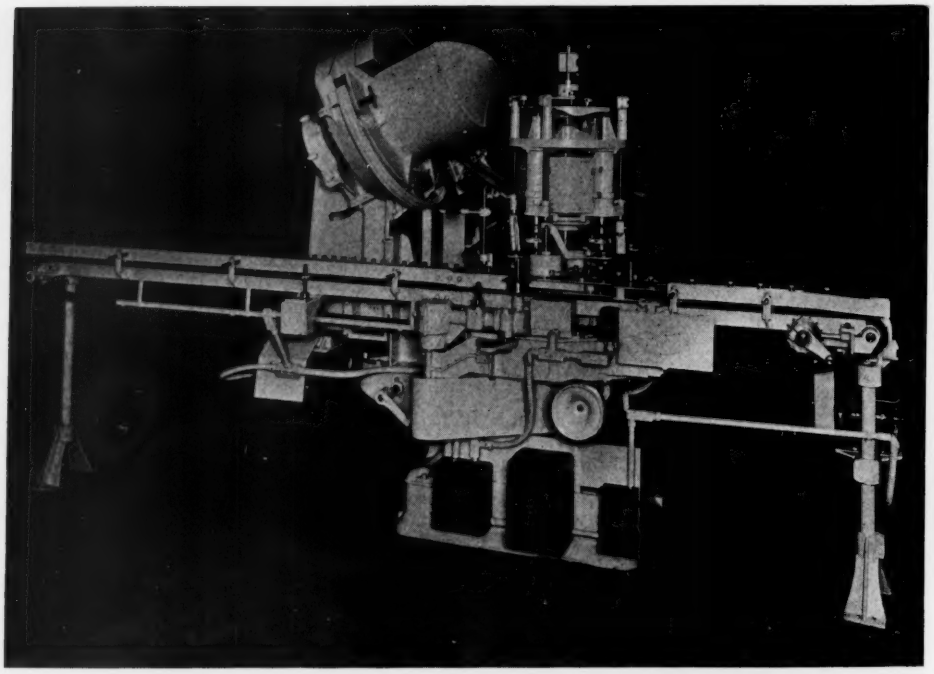
Simple, efficient machines that will quickly save their moderate cost by doing away with loss of product. By use of special feed trays, various size containers can be handled, at speeds of 10 to 20 a minute, depending on product and size of container. Fills cans and jugs, as well as bottles, from miniatures to 5¾ in. diameter bottles.

CONVEYORS AND WORK TABLES



Chain Conveyors, which speed up production and save labor, can be furnished, with Semi-Automatic Corkers, to meet all requirements. Work Table Conveyors, for capping, corking, labelling and inspecting, can be supplied to order. (See cut below.) Frame of heavy angle iron, rigidly braced. Legs adjustable.





1. Four-head rotary capper, fully automatic in operation. Photo courtesy of the Pneumatic Scale Corp., Ltd.

Capping and Sealing Equipment

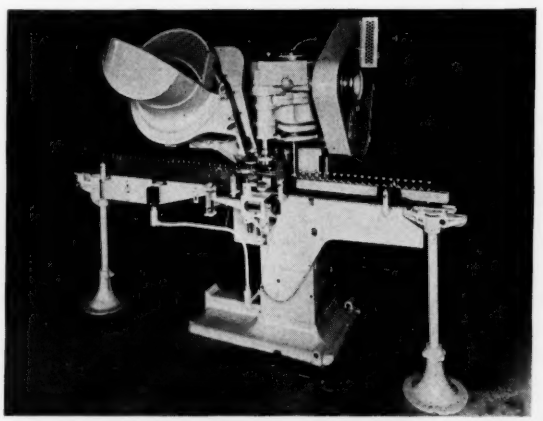
by I. H. RISSER*

Screw caps and turn-on caps are manufactured in many different types and styles and of various materials. They are constructed of plastics and metal. There is the single-shell cap and the double-shell cap. There is the continuous-thread cap and the lug-type cap. All of them are applied by the same general principle: that of turning the cap onto the neck of the bottle, advancing the top of the cap against the top of the bottle by means of a thread or a wedge so as to seal the inner top of the cap to the bottle lip.

Since it is difficult to control accurately the finish on the top of the glass and the corresponding contact part of the cap, it is necessary that some gasket be used between these two surfaces to insure proper closure and a perfect seal so as to prevent leakage and contamination. It is, therefore, essential that considerable care be used in selecting the proper type gasket, which is commonly termed the cap liner. This liner should be of the proper material to withstand the corrosive action of the product and be sufficiently flexible to permit a perfect seal between the top of the cap and the glass finish without turning the cap on so tightly that it cannot be readily removed by hand.

The application of the screw-cap closure is not as difficult a problem as it at first appears. When the cap is properly designed so that the lead threads readily follow the thread on the glass, thus preventing any tendency to cross thread, and the liners are glued into the cap or attached in a satisfactory manner so as to prevent their falling out of the cap, it is possible to employ automatic equipment in applying these closures.

There are several types of machines available for applying turn-on caps. On some of these it is only necessary to dump the caps in a hopper, from where they



2. Single head full automatic capper. Courtesy Pneumatic Scale Corp., Ltd.

* In Charge of Sales, U. S. Bottlers Machinery Co.

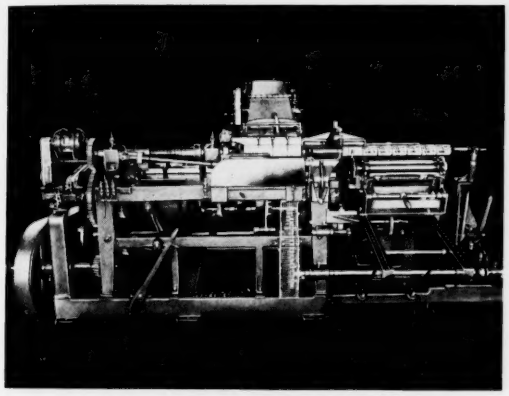
THE "SWING" IS TO FIBRE BODY CANS

. . . and here are the reasons . . .

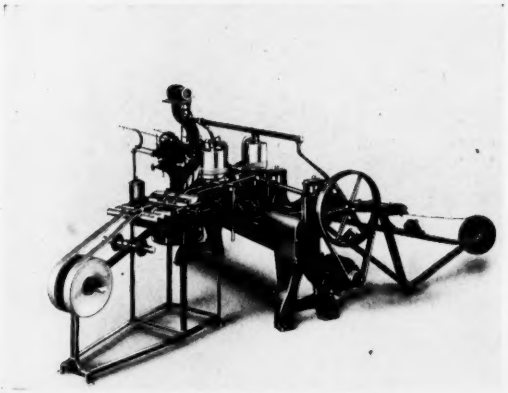
—*Improvement* in Package Design!
—Show *Definite Savings* on PRODUCTION COSTS!
—Provide *greater* DURABILITY!
—Offer a greater variety of shapes and sizes which effect worthwhile *Savings* in packing and space on dealer's shelves.
—And most important of all, *Real* SALES APPEAL!

Knowlton Fibre Can Machines are helping thousands of producers of packaged goods to a generous share of EXTRA SALES and EXTRA PROFITS. They can do the same for YOU!





Automatic Convolute Fibre Can Winder



Knowlton Spiral Tube Winding Machine

To Send Out the Nation's Goods "Better Dressed" is the Job of These KNOWLTON FIBRE CAN MACHINES

These new Automatic Fibre Can Machines are the result of Knowlton's Fifty Years' experience in the packaging equipment field and incorporate a host of special features which are acclaimed as revolutionary by manufacturers and packers alike. The part which these KNOWLTON Machines play in increasing sales (through Package Design) is a mighty important one and is a task which they perform in an amazingly simple and economical manner.

The KNOWLTON AUTOMATIC CONVOLUTE WINDING MACHINE, for instance, accepts paper stock from the roll and *automatically* produces fibre can bodies in round, rectangular, or irregular shapes—applies the adhesive and lithographed labels and delivers the completed can bodies ready for the seaming on of the tin tops and bottoms. This machine is equipped with an automatic slitting and labeling attachment which permits production of from *one* to *four* complete can bodies at a time during the winding process. It produces fibre cans up to 16″ in height or multiples thereof.

The KNOWLTON SPIRAL TUBE WINDING MACHINE is another notable example of modern efficiency. It is the *fastest* and most economical machine for winding paper tubes or cores ranging from 2 to 19 ply and its product is unsurpassed for tube strength, accuracy and high quality in the making of food containers, cosmetic boxes, tissue cores, heavy mill cores, mailing tubes, dry battery cores, spools, etc.

Write or call our nearest office for complete information regarding these two KNOWLTON MACHINES.

M. D. KNOWLTON CO., ROCHESTER, N. Y.

BOSTON
637 Massachusetts Ave.

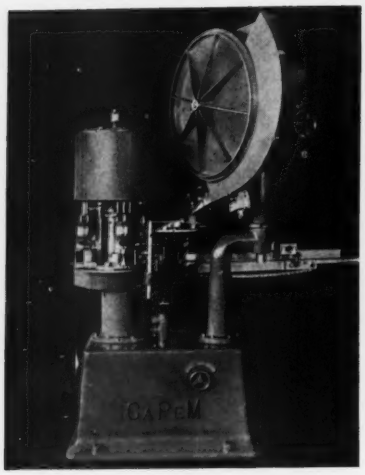
NEW YORK
203 Wooster St.

Pacific Coast Representatives
H. W. BRINTNALL CO.
Los Angeles, San Francisco, Seattle

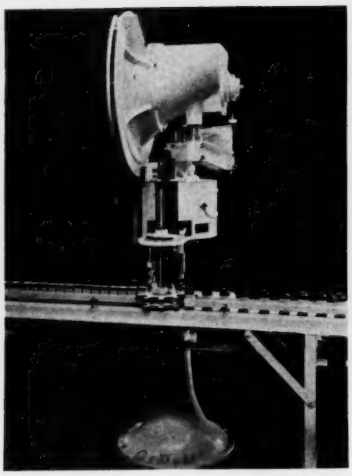
CHICAGO
9 S. Clinton St.

TORONTO, CAN.
260 Richmond St., W.

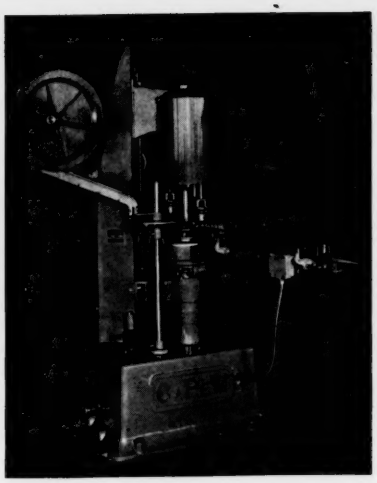
XUM



3. Full automatic four-spindle rotary capper. Photos courtesy Consolidated Packaging Machinery Corp.



4. Full automatic capper designed for sorting, feeding and applying square cover assembly to can bodies.



5. Automatic two-spindle rotary type capper designed to meet requirements of firms having an intermediate output.

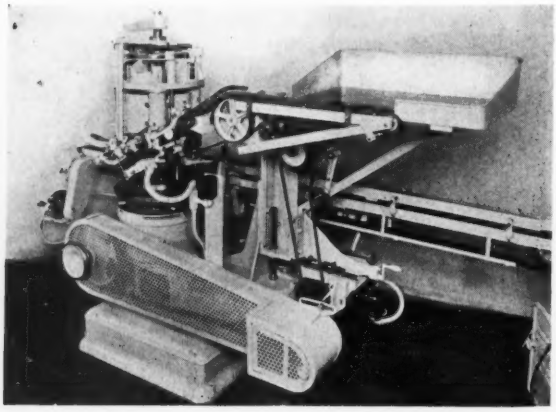
are systematically sorted and fed to the machine in relative cooperation with containers received from the filler. On others, generally referred to as semi-automatic cappers, it is necessary to start the cap on the container. Regardless of the type machine employed, the caps must be applied with the proper tension so that a perfect seal is made both with the top of the bottle and the cap liner.

Hand-Capping Machines

There are many cases where production requirements are so small that the tendency is to continue with the old hand operation. For those manufacturers whose requirements are small, the adoption of at least a hand-tightening unit is recommended. This unit can be adjusted so that every cap will be applied to the proper tension in order to insure a proper seal and still be easily removable by hand.

Semi-Automatic Machines

The semi-automatic machine is of the same general construction and size as the fully automatic. The cap-feeding device, however, is omitted and the cap started on the container by hand. It is installed in the production line the same as the fully automatic and occupies the same space as the automatic machine. It has a feed conveyor and a discharge conveyor, and the containers are fed and discharged automatically.



6. Hand cap feeding arrangement on a high-speed rotary capper. Photo courtesy Pneumatic Scale Corp., Ltd.

The smallest semi-automatic machine is generally a single-head machine designed for operating at capacities from 1800 per hour to about 2700 per hour. In order to obtain a larger capacity, it is necessary to employ a machine using a number of spindles rather than a single head. These units are designed to possess a capacity of from approximately 50 containers per minute to 120 or more. They are usually of the rotary type and are in practically all cases the same machine as the fully automatic, except for the omission of the automatic cap-feeding and applying mechanism.

Another variation of the semi-automatic capper is the type which uses a belt cap feed onto which the operator simply feeds the caps. From that point on, operation is completely automatic. This method is often used where closures are not suited to automatic sorting and feeding.

The semi-automatic unit can be readily changed from one size container and cap to another and the cost of attachments for the different containers is not exceedingly high. On the fully automatic machine, a change from one size cap and container to another requires a longer period of time and the attachments, of course, are much more costly.

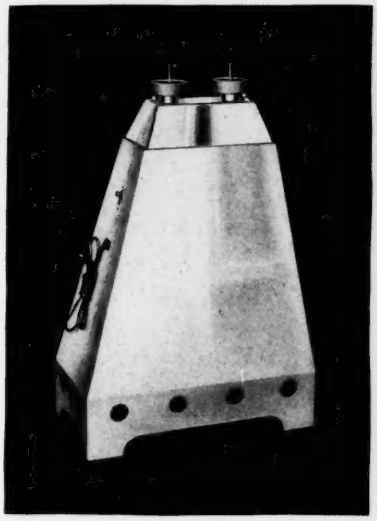
Full Automatic Machines

When it comes to larger capacities, or outputs, we find the fully automatic machine far more desirable inasmuch as its greater efficiency will considerably reduce packaging production costs.

Automatic units are most profitably adapted to those production lines operating at a capacity of 45 or more containers per minute. There are, however, many instances where a steady production of 35 to 40 containers

MACHINERY OF ENGINEERED-DESIGN

ILLUSTRATED directly below are three (3) units of our manufacture out of a complete line of bottling and packaging machinery that comprises over 150 different styles, types and sizes of machinery. The complete line of bottling and packaging machinery, as engineered and manufactured by this organization, includes Washing, Washing and Draining Machines and Washers and Dryers in straightline, rotary and revolving types, Air Cleaners, Direct Pressure, Gravity and Vacuum Filling Machines, in straightline and rotary types, Conveyors, Stills, Filters, Cappers, Corkers and miscellaneous kindred equipment. The scope of the complete line of machinery can best be expressed by stating that prices on individual units range from a minimum of $1.75 to a maximum of $15,000 per machine.



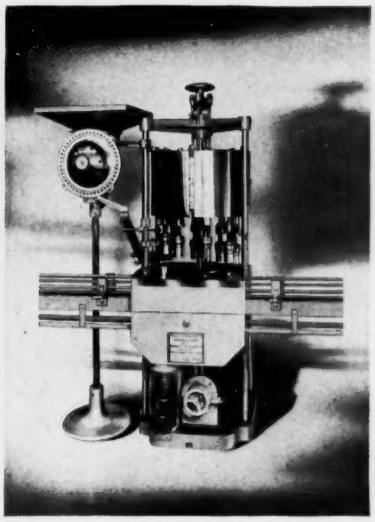
2-TUBE AIR CLEANERS

MODERATE in cost, efficient in action, requiring but little floor space, with a cleaning speed of 30 to 45 containers per minute, this two-tube air cleaner does an efficient and low-cost job of thoroughly cleaning containers before they are fed to the filling machines. The cleaning tubes are normally furnished in brass, nickel-plated, and 10 tubes in all (5 sets of 2 each) will take care of the entire range of containers to be cleaned, including all types, styles and sizes of neck finishes and sizes of containers. All sizes of tubes are interchangeable. Bottles are cleaned when they are in an upside-down-vertical position, where natural gravity, combined with man-made compressed air, does the job of cleaning rapidly and efficiently at a very low cost per bottle.



2-TUBE VACUUM FILLERS

OPERATING on the vacuum principle of filling, this machine will fill 500 to 1400 containers per hour. Designed to fill directly from a 5-gallon bottle, barrel or low storage container. Not necessary to elevate the product so as to have a natural gravity flow to the machine. Two containers are filled simultaneously. Unit is semi-automatic in action. Not necessary to use filling trays, thereby eliminating a double handling of containers. Can be furnished with standard heads for filling cork or screw cap ware, or a special head can be furnished for filling all-glass-sprinkler-top-shaker bottles.

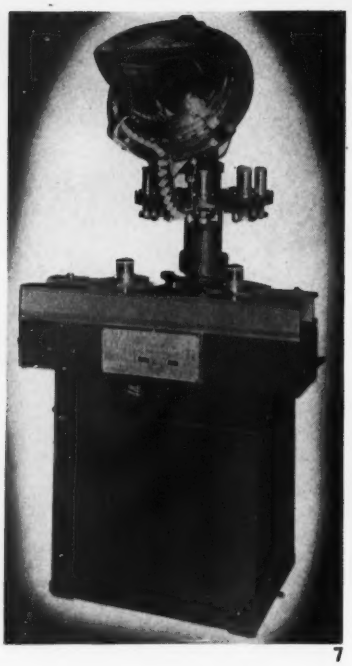


8-HEAD ROTARY CAPPERS

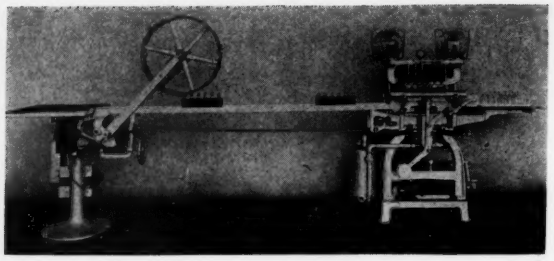
COMBINING large output capacity, general flexibility and mechanical simplicity, these fully-automatic cappers do a splendid, rapid and efficient closing job. Capping speeds are 60 to 120 capped containers per minute. Will handle all sizes of screw caps, ranging in size from 15 to 70 millimeters as standard. Capping chucks capable of taking both larger and smaller caps than 15 and 70 millimeters can be furnished upon special order. Because 8 capping chucks are used, the entire machine can be run at a slower speed to get 120 capped containers per minute. This slower operating speed does much to increase the total life of the capper. Capper will handle screw caps fabricated of any material, including those molded of plastics.

U-S BOTTLERS MACHINERY CO.
4032 NORTH ROCKWELL STREET • CHICAGO

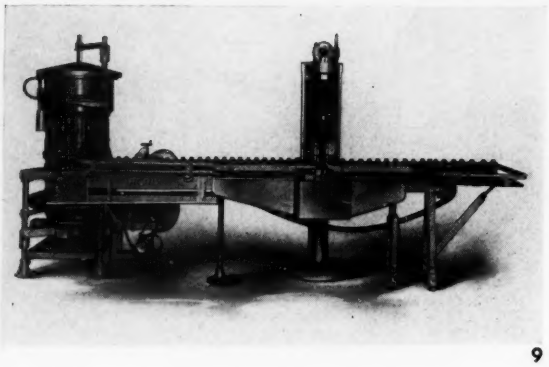
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7



8



9

7. Newly developed full automatic rotary corker for flanged corks. Courtesy U. S. Bottlers Machinery Co. **8.** Corking wheel unit on discharge conveyor of filling machine. Courtesy Pneumatic Scale Corp., Ltd. **9.** Elgin semi-automatic screw capper in hook-up with band feed automatic discharge rotary filler (at left). Photo courtesy of the Horix Manufacturing Co.

per minute is needed and sizes are suited to automatic production. In such cases, a full automatic single head or slow speed multiple head unit may be desirable.

There are many important features to be considered in selecting an automatic capper. The most important are:

1. Output capacity
2. General flexibility
3. Mechanical and structural design

Output Capacity or production capacity, should be variable and immediately adjustable to suit the production speed of the filling machine and other production units incorporated in the filling line. With fully automatic equipment, this capacity should be variable: 25 to 35 per minute for single head or slow speed multiple head types and 50 to 130 per minute for larger high speed multiple head rotary types.

Since properly synchronized machines maintain a better production efficiency, it is essential that the capper speed can be instantly synchronized with the speed of the other equipment. The old method of using change-gears to approximate the operating speeds of other units employed in the packaging line is no longer desirable. The change-gear method never permitted absolute synchronization. On the modern machines, synchronization is accomplished by the turn of a simple hand wheel. Operating capacity can be varied instantly to any desired degree, thus assuring proper synchronization and increased production efficiency.

Flexibility: The question of flexibility is one which every prospective user of automatic machinery must answer for himself. He has to consider this question from every angle as he may be handling more than a single size cap and container.

One of the most important things to look for in determining flexibility is simplicity. It is generally found that the most simple machine, operating with the fewest movements, can usually be changed in the shortest time. Flexibility also demands that the machine be instantly adjustable to meet production requirements and output conditions. Also it is well to bear in mind that certain shapes of containers and caps can more readily be handled on automatic machinery than others.

CROWNS AND CORKS

When plain or flanged corks are used, the capping problem resolves itself into one of inserting the cork into the neck, rather than turning a thread. Such insertion is, in the vast majority of cases, done in part or in whole by hand. The most familiar mechanical aid is the corking wheel conveyor, which consists of a section of belt conveyor with a wheel of fairly large diameter suspended above it at the height of the bottle top. Operators start the corks as the containers pass down the fore part of the conveyor and the movement of the belt then forces the bottles, one by one, under the corking wheel. Thus a gradual and increasing pressure is applied to each cork in turn, forcing it into position.

Another type of corker substitutes an endless belt, running over two pulleys, for the corking wheel. A rigid metal plate behind the slanting lower portion of the moving belt forces the corks firmly and evenly into the neck of the containers.

Crown caps are frequently applied by equipment forming an integral part of bottle filling machines. However, separate rotary crowners of fully automatic type are available. These are very similar, in feed and general structure, to rotary turn-on closure cappers, except that

XUM

TOLEDO SCALES

TOLEDO SCALE COMPANY • TOLEDO, OHIO

CANADIAN TOLEDO SCALE CO. LIMITED, TORONTO, ONT. SALES AND SERVICE IN 181 CITIES, U.S.A. AND CANADA

SPEEDWEIGH

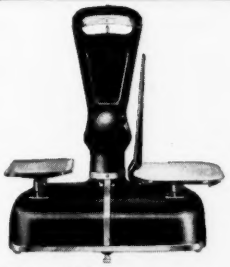
—bringing new Speed, ACCURACY and Dependability to packing, check-weighing, and testing operations.



MODEL 1091—
end-tower type



MODEL 1095—
center-tower type



GRAVITYGRAM—combines extreme sensitivity with a full 30-lb. capacity, for packing or check-weighing. Unaffected by normal out-of-level conditions—Sensitive to 1/64 ounce.



NET WEIGHT PACKING SCALE

For heavy-duty requirements. Available in either bench or portable types. Capacities to 500 lb. No leveling required.

ONLY THE SPEEDWEIGH BRINGS YOU ALL THESE IMPORTANT FEATURES:

- **Toledo Accuracy** —precision-built for dependable performance
- **High Sensitivity** —1/64 ounce moves indicator
- **No Need to Level** —ready to use anywhere
- **Lock Poise** —cannot be moved accidentally
- **Carrying Handle** —fits flush when not in use
- **Stainless Steel Beam** —1 lb. by ¼ ounce
- **Light Weight** —major parts of die-cast aluminum
- **Capacity 5 lb.**

AUTOMATIC WEIGHERS



Electric cut-off controls vibrator-feeder as well as hopper-gate. Complete sequence of operation is automatically repeated.

Scale, equipped with electric cut-off, controls feeding, weighing, and hopper-discharge for dry materials. Maximum accuracy achieved, as there is no mechanical contact between cut-off and weighing mechanism . . . Equipment shown in photo used in packing elbow macaroni. Also available with solenoid valves for precision weighing and automatic filling of liquids. Automatic Weighers are built to a variety of specifications to exactly meet individual requirements.

FOR ALL REQUIREMENTS



There are upwards of 45,000 variations of basic Toledo models available for the full range of modern industrial weighing requirements . . . up to 30 tons and more.

With the dial-type Toledos it is also possible to furnish weight-printing equipment (Toledo Printweigh) that provides either a ticket or a strip record of all weighings.

CALL the Toledo Scale office in your city, or write Toledo Scale Company, Toledo, Ohio, for information on equipment for your particular weighing requirements.

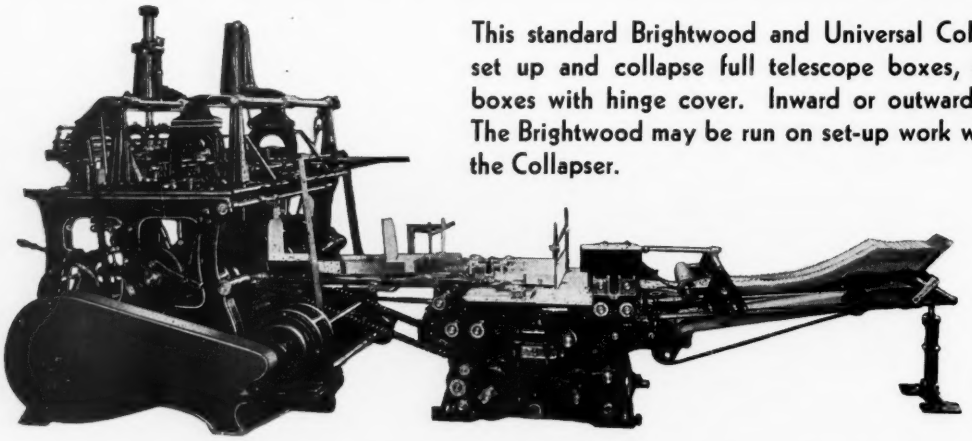
TOLEDO maintains the only completely nation-wide scale service organization in both United States and Canada, with factory-trained mechanics stationed in 181 cities.

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PAPER BOXMAKING AND PA

~ set up boxes, folding boxes, set up cartons ~ gross and net weighing ~ packing ~ lining ~ sealing

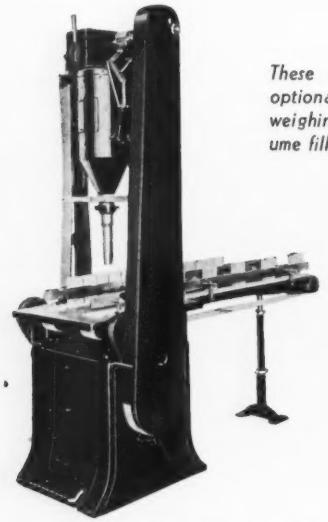
BRIGHTWOOD BOX MACHINE AND COLLAPSING UNIT



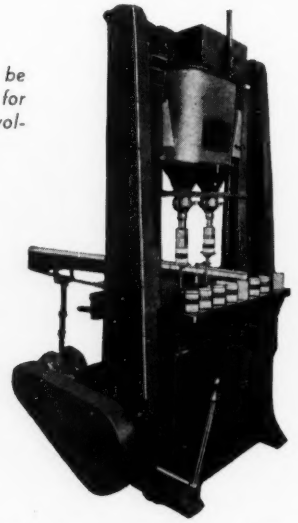
This standard Brightwood and Universal Collapsing Unit will set up and collapse full telescope boxes, shallow trays, or boxes with hinge cover. Inward or outward fold as desired. The Brightwood may be run on set-up work without the use of the Collapser.

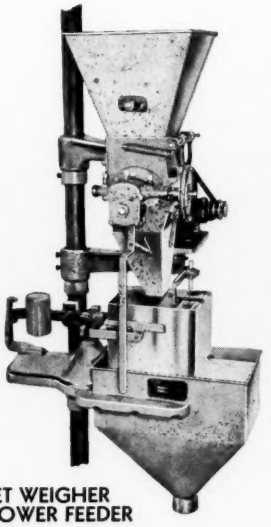
NET WEIGHING—GROSS WEIGHING AND FILLING MACHINES

Our Scott Net Weighing Machines and Our Bond Gross Weighing, Filling and Packing Machines have been known for years throughout the packaging industry for their accuracy and dependability. In addition to those models illustrated we have fully automatic models suitable for a wide variety of dry products and different types of containers. Send us samples and particulars on your job and we will gladly and without obligation submit details on the model most suitable for your needs.



These models may be optionally equipped for weighing, packing or volume filling.





MODEL MG BOND PACKER-WEIGHER

Semi automatic—one operator.

Speed: up to 30 per minute on powdered materials.

Adjustable for packages 8 in. square or round and up to 14 in. high

MODEL MH BOND PACKER-WEIGHER

Semi automatic—one operator.

Speed: up to 50 per minute on powdered materials.

Adjustable for packages 8 in. square or round and up to 14 in. high.

SCOTT NET WEIGHER WITH POWER FEEDER

Speed: up to 35 per minute.

Ideal for coffee packers. Weighs all grinds, from whole bean to finely pulverized.

Different model feeders can be supplied to suit the product to be handled; as well as scales of different capacities.

UNITED STATES AUTOMATIC BO

Owning and Oper

National Packaging Machinery Co. Carto

18 Arboretum Road, (Roslindale), Bosto

Branch Offices: New Y

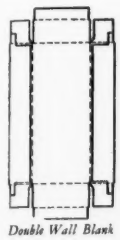
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PACKAGING MACHINERY

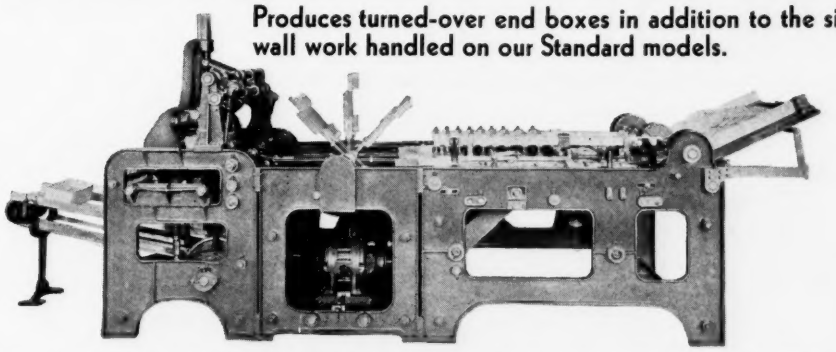
sealing ~ wrapping ~ package forming and filling ~ cartoning

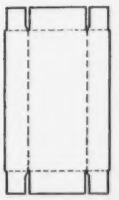
UNIVERSAL BRIGHTWOOD BOX MACHINE

Produces turned-over end boxes in addition to the single wall work handled on our Standard models.



Double Wall Blank





Single Wall Blank

A high grade machine for high grade boxes, such as shoe boxes, candy, hosiery and other good quality boxes. It forms turned-over end boxes from blanks with single or double side walls, either creased or scored. Also produces single wall boxes, the same as on the Standard Brightwood. The operation is as follows:

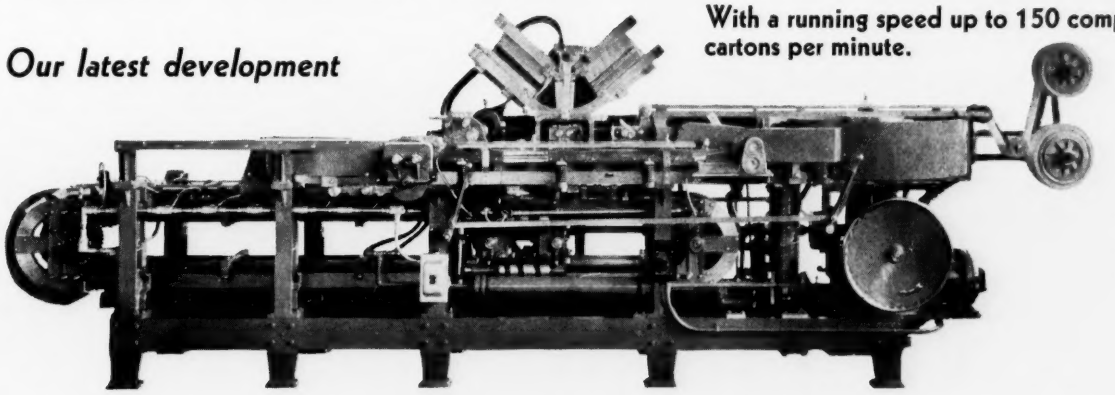
Flat blanks are stacked in the slanting magazine at the extreme right, and fed by combing wheel roll into conveyor where the score is broken and glue applied by rotary method (either full or spot gluing), then conveyed into spider transfer where glue is tempered before blank enters the plunger section. Here it is folded and formed under 5,000 pound pressure, and is ready for use immediately after being discharged at the extreme left.

A 2 h. p. motor is installed underneath the centre section of the machine, which is equipped with push button control, magnetic brake and release, and Variable Speed Control.

CARTON MAKING, LINING AND FILLING MACHINE

Our latest development

With a running speed up to 150 complete cartons per minute.



A new machine that is completely different! In one complete automatic unit it sets up and glues the cartons from the flat blanks, lines, fills and closes them. "Brightwood cereal style" blanks are used, producing a solid bottom carton that provides economy in the amount of board used as well as in the gluing operation.

The operation of the machine briefly is: The wax paper is cut from a roll and formed over formers. Then the flat blank is fed from a dual magazine and formed on the same formers over the wax paper. The carton is glued on the two longitudinal sides and passed through a heating unit, which hastens the adhesion and at the same time heat-seals the liner. The lined carton is then elevated to the filling station where the product is inserted or filled. Next the top of the liner is folded (and heat-sealed if a sift-proof package is required) and the top flaps of the carton are either glued or tucked. A Cellophane wrapping attachment can be added if desired, and if no liner is required this unit can be omitted.

The machine can be equipped to carton one-piece solid articles, or multiple free-flowing solids or free-flowing powdered products. Speeds will vary from 100 to 150 packages per minute, depending on the product.

BOX MACHINERY COMPANY, INC.

Operating
Cartoning Machinery Corp.
Boston, Mass.
New York, Chicago

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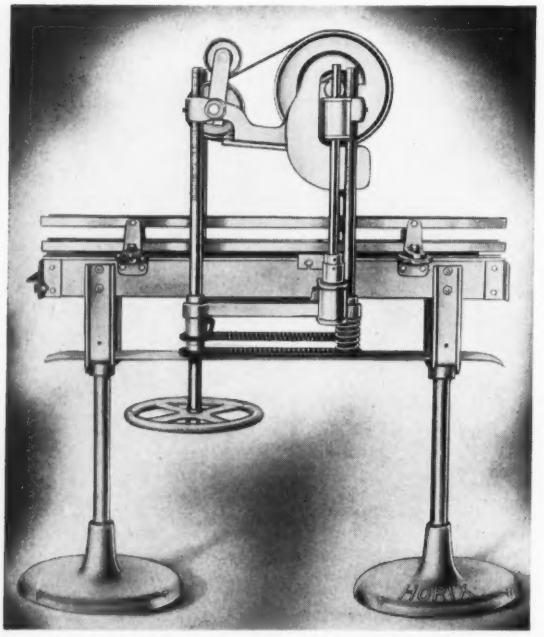
they substitute a crown forming pressure for the turning action of the ordinary capper.

Hand and semi-automatic devices for applying crown caps, milk bottle caps, foil and paper hoods for milk bottles, and many other specialized types of closure or super-closure are also available. The basic principle of application varies very little, however, from those described in the foregoing discussion.

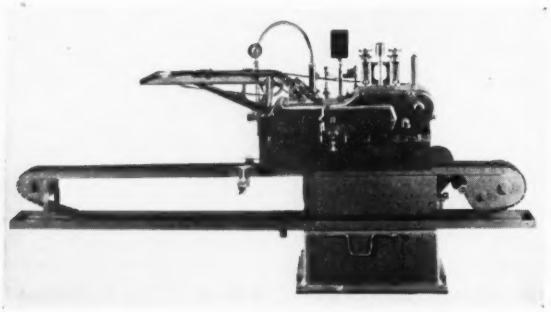
So-called roll-on caps are applied by rotary automatic machines which position the unthreaded cap on the bottle and hold it thus while revolving rollers form the cap metal to the shape of the bottle thread.

Fully automatic corking units have been devised recently for a number of special applications. In one such machine, corks are placed into correct position in the corking head for driving into the bottle neck by a positive air pressure feeding device. Corks are hopper fed into a channel that directs each cork to the correct position and register before insertion in the bottle neck. The large capacity hopper is so designed that a casual glance from the line operator will determine just when a new batch of corks is required.

Feeding of the filled but uncorked bottles into the machine is controlled by an electric feed switch. The machine is so designed as to automatically stop whenever a "break" appears in the line of advancing bottles and to remain stopped until the break is closed. The machine is equipped with a vari-drive, making possible its operation at exactly the speed called for by the production schedule and its synchronization with the other units of a packaging line.



10. A belt backed by an inclined plate replaces the customary wheel on this newly developed corking device. Photo courtesy Horix Manufacturing Co.



11. Vapor vacuum capping and sealing machine. Photo courtesy White Cap Co.

VAPOR VACUUM SEALING

Vapor vacuum sealing is a process whereby an hermetic seal, with metal caps on glass or metal containers for food or other products, is applied. The bottle, jar, tumbler or other package to be capped is carried on a conventional straight line conveyor, at a steady rate of speed, through a short tunnel, within which the upper part of the container is swept by a gentle flow of slightly super-heated steam. This hot vapor displaces the air in the head-space above the product.

While still surrounded by the hot vapor, the jar picks up its cap, which has also been hanging in the path of the hot vapors. A capping device quickly presses the closure onto the container, which then passes to a cooler region of the tunnel where the contraction of the vapor in the head-space causes the vacuum to be formed.

While the primary purpose of the steam is to create vacuum, it also serves a secondary function in that it sterilizes the cap and creates a sterile atmosphere for the capping operation.

The fact that the vacuum is not formed until after the seal has been established is a unique and highly important characteristic of the vapor vacuum system, as it prevents any disturbance of the product. It is impossible for the vacuum to suck the product out of the container, thus making the system ideal for use on hot products, or cold products such as salad dressing, which may contain large amounts of entrained air or gas.

Mechanically, the system is extremely simple. No vacuum pumps of any kind are used with the capper, nor is it necessary to time it to any filler or labeler. The conveyor may, in general, be operated at any speed to suit the convenience of the packer, while the capping speed is limited only by the ability of the conveyor to carry the packages. The number of types of caps available for use with this system has increased each year and the capper itself has kept pace in its development. The current models are fully adjustable for all types of vapor vacuum caps and practically every type of bottle, without the removal or addition of any extra parts or attachments. Uniform, controllable vacuums of from 2 to 28 inches can be obtained.

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THE LAMSON COMPANY

Lamson Place, Syracuse, N. Y.

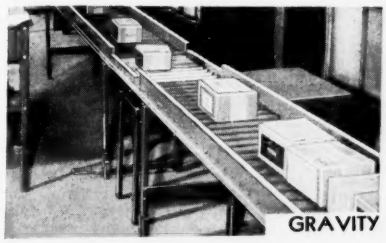
Materials Handling Equipment—Pneumatic Dispatch Tubes

OFFICES

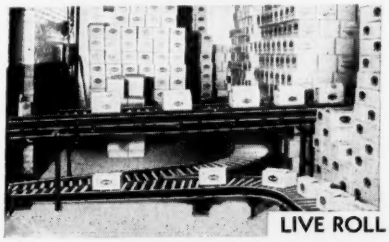
Atlanta, Ga.	Chicago, Ill.	Dallas, Tex.	Minneapolis, Minn.	Pittsburgh, Pa.	Seattle, Wash.
Baltimore, Md.	Cincinnati, Ohio	Detroit, Mich.	New York, N. Y.	St. Louis, Mo.	Washington, D. C.
Boston, Mass.	Cleveland, Ohio	Los Angeles, Cal.	Philadelphia, Pa.	San Francisco, Cal.	

CANADA: Toronto, Ont., and Vancouver, B. C.

LAMSON CONVEYORS—Lamson Conveyors are built in a wide range of types and designs to meet practically every material and product handling problem. In capacity they are designed to solve both simple problems requiring merely a section or two of Roller Gravity Conveyor and complex problems requiring complete systems made up of various types of conveyors.



GRAVITY

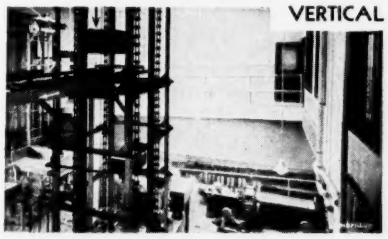


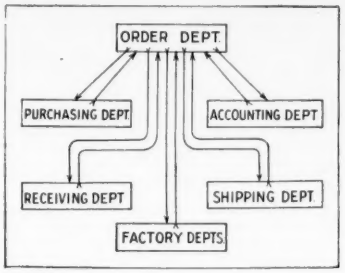
LIVE ROLL



OVERHEAD

VERTICAL





In addition to standard conveyors shown Lamson is equipped to design and install modifications of them or special conveyors to meet individual requirements.

PNEUMATIC DISPATCH TUBES—Wherever there is paper traffic between departments, offices or buildings, Lamson Dispatch Tubes will save time, steps, and money. Tubes are used in practically every type of business to speed the flow of routine papers. Standard carrier sizes range from 1½", 2¼", 3" and 4" diameter carriers up to 3 x 6 and 4 x 7 inch oval carriers.

Lamson Dispatch Tubes are easy to install and at surprisingly low cost. The direct savings usually pay for the installation in a short time.

CONVEYORS

ROLLER GRAVITY—Made in standard 10 ft. straight sections, 45° and 90° curves or special sections—multiple punched frames for perfect alignment—rugged construction available in 7/8", 1¼", 1⅝" 1¾", 1.9", 2½", 2⅞", 3⅛" and 4" diameter rolls with free running, dustproof and grease packed bearings.

SANITARY TYPE—A roller gravity specially adapted where frequent cleaning is necessary. It is not affected by steam, water, or lactic acid. The spindle is forced into a solid head making a one-piece roll held in the frame by a special bronze and graphite bearing.

LIVE ROLL—Actually, a roller gravity conveyor powered by a rubber covered coil chain which makes a "kiss touch" on the underside of the rolls. Permits a complete system on one handy working level—also available in incline, decline and spiral conveyors.

BOOSTER—Designed for varying degrees of elevation, it is a very effective and economical method of lifting boxes, cartons, tote pans, cases, etc., from one floor to upper floors. Supplied in any height or width. It is a positive loading conveyor ideal for many plants.

OVERHEAD—A very flexible conveyor profitably adapted to many handling problems. Carriers are available to permit handling of a wide range of loads. Ideal for progressive assembly, ovens, paint spray, dip tanks, etc.—provides for live storage and requires no floor space.

SLAT TYPE—A conveyor that handles a wide range of loads—suitable for heavy duty. May be horizontal or vertical with attached platforms. Can be installed flush with floor to permit cross traffic if desired.

VERTICAL—Lamson makes a range of vertical conveyors to meet practically any conditions. From simple, light duty lifts up to heavy duty with automatic devices and selective features.

BELT TYPE—Powered belt conveyors for every application—with roller gravity or slide plate bed construction. Supplied in widths from 3 to 48 in. with solid woven cotton, rubber filled, rubber covered, sanitary, wax treated, oil treated or bituminous treated belting.

DISPATCH TUBES

A Common Type of Tube Service

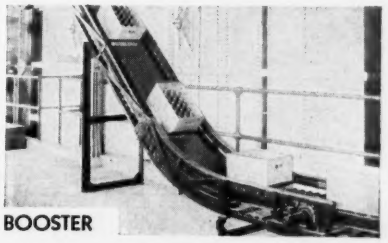
With a Central in the order department, the usual heavy paper traffic originating here is handled with speed and safety to all departments. All departments have intercommunication through the central.

Typical Tube Installation in a Factory

This particular station at the right is equipped with two lines of tubes providing direct service between two other points.



SANITARY

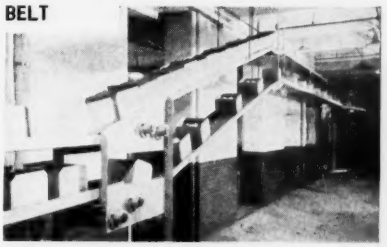


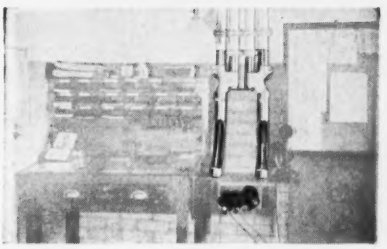
BOOSTER



SLAT

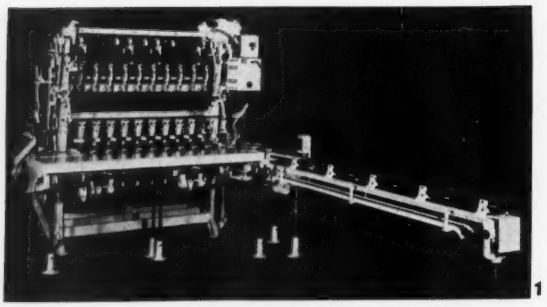
BELT





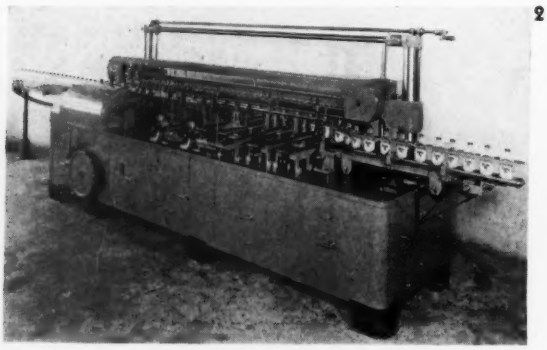
Labeling Machines and Devices

by C. A. CLAUS*



1

1. 10-wide multiple automatic labeler. Labels 10 bottles simultaneously or output of 200 containers per minute. Courtesy The Edward Ermold Co. **2.** Streamlined duplex labeler with full automatic spotting device. Output of 120 bottles per minute. Courtesy Pneumatic Scale Corp., Ltd.



2

Broadly speaking, there are four different methods which underlie the principles used in the design of modern labeling machines.

(1) Adhesive is applied to "pickers" which in turn carry the label from the bottom of a hopper to the package. The label is clamped to the package, the pickers detach themselves from the label and then pressure is applied so that the adhesive which remains on the label from the pickers is caused to attach the label to the wall of the package.

(2) Adhesive is applied to a rubber pad. This pad is brought in contact with the package and then the label in turn is brought in contact with the adhesive-covered surface of the package, after which pressure is applied to form the union.

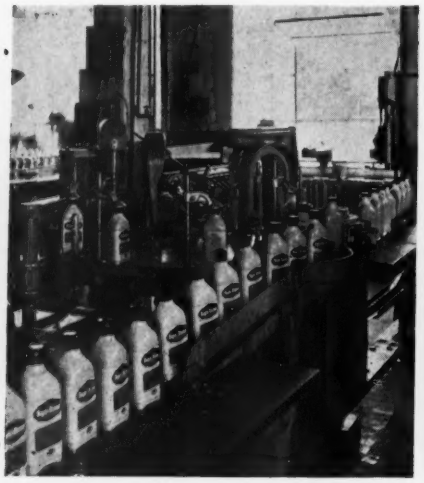
(3) The label is fed by pneumatic means from a hopper, passed over an opening where a spraying apparatus applies the adhesive. By the same pneumatic means, the label is then carried to the package and applied. Pressure is exerted to complete the attaching.

(4) The label is fed from a hopper by means of a pneumatic platen, which rigidly holds the label over its entire surface in a flat condition and carried tangentially over a twin roller gumming mechanism where a uniform film of adhesive is rolled onto the label. By the same pneumatic means, it is carried and attached to the article, after which pressure is applied to insure firm adhesion.

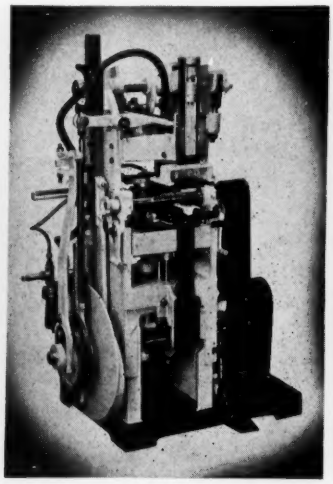
As is natural with almost all mechanization, the modern labeler is offered in both semi-automatic and

* Vice-President in Charge of Sales, New Jersey Machine Corp.

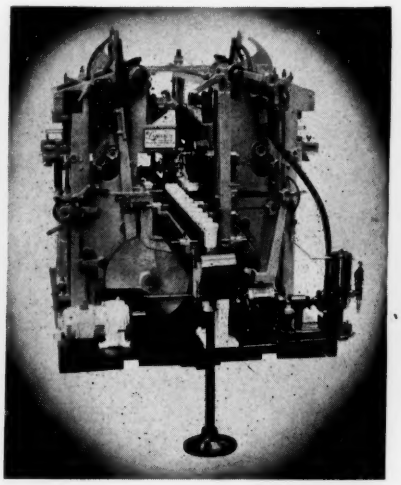
3. Automatic labeler operating on difficult triangular bottle. Photo courtesy The Liquid Carbonic Corp.



4. Hand fed semi-automatic labeler. Photo courtesy of the New Jersey Machine Corp.

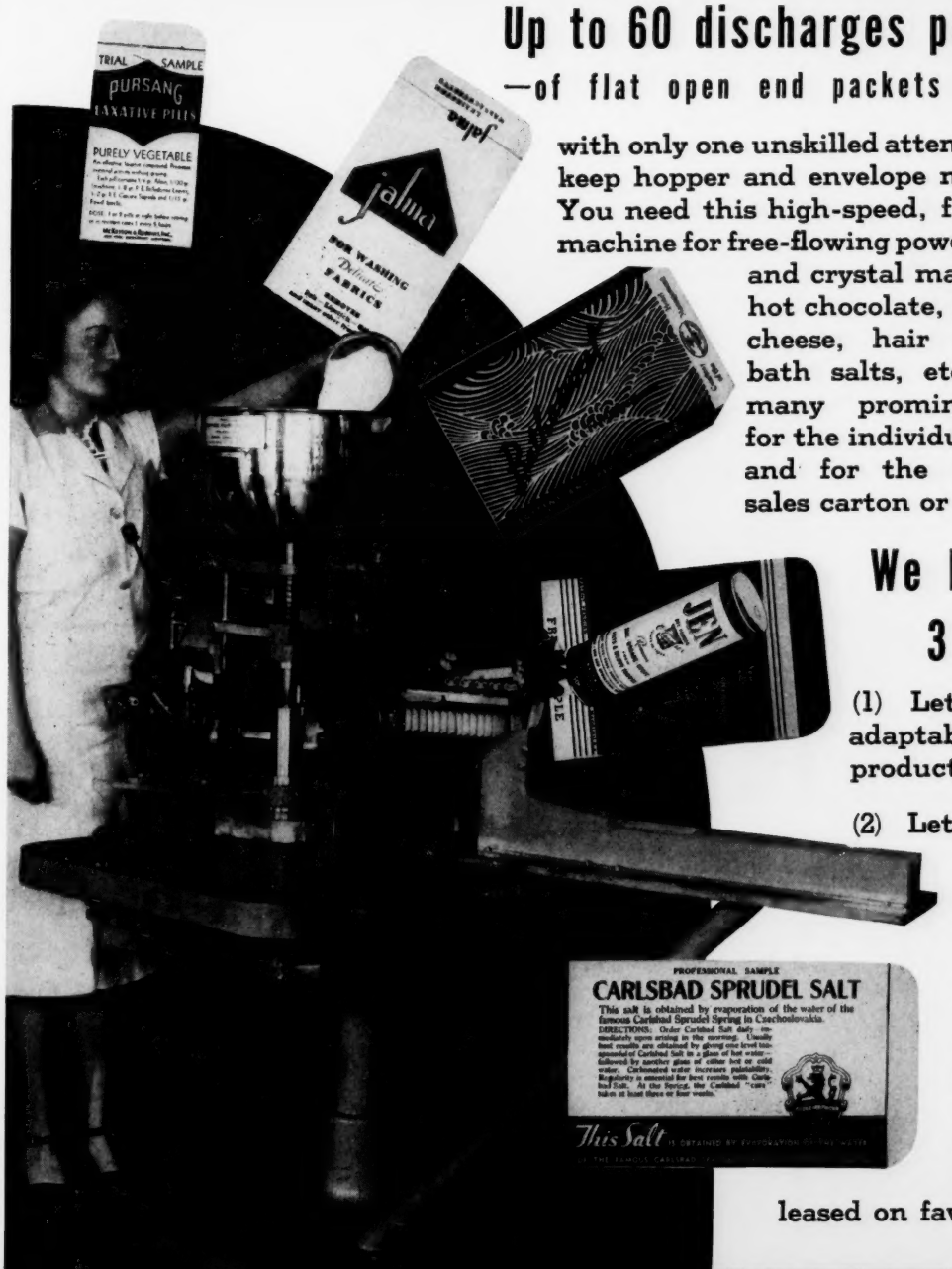


5. Fully automatic duplex labeler applying front and back labels simultaneously. Photo courtesy New Jersey Machine Corp.



XUM

This BROWN BAG FILLING MACHINE measures . . . fills . . . seals!



Up to 60 discharges per minute!

—of flat open end packets or envelopes

with only one unskilled attendant needed to keep hopper and envelope magazine filled. You need this high-speed, fully automatic machine for free-flowing powdered, granular and crystal materials such as hot chocolate, gelatin, grated cheese, hair rinse powder, bath salts, etc. In use by many prominent concerns for the individual sales packet and for the multiple unit sales carton or package.

We help you 3 ways

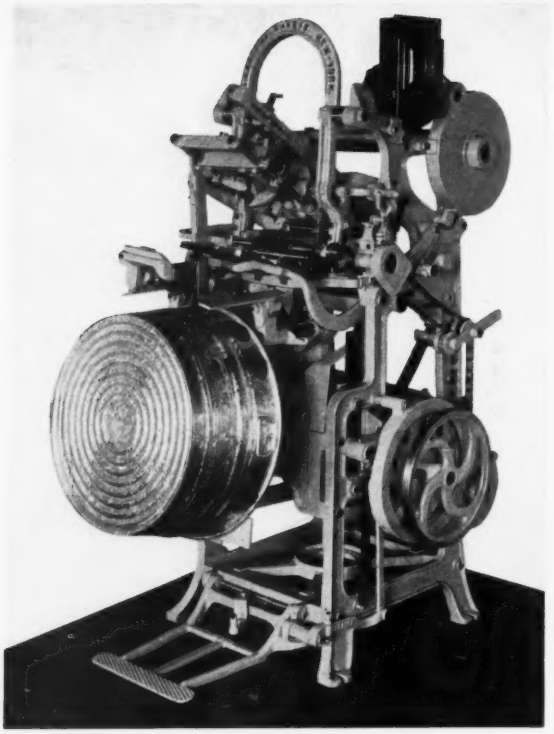
(1) Let us test the adaptability of your product.

(2) Let us quote on Brown packets of your or our design.

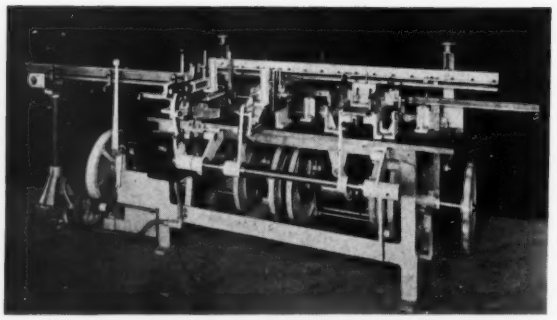
(3) Let us tell you how a Brown Bag Filling Machine may be purchased outright or leased on favorable terms.

THE BROWN BAG FILLING MACHINE CO.
FITCHBURG MASSACHUSETTS

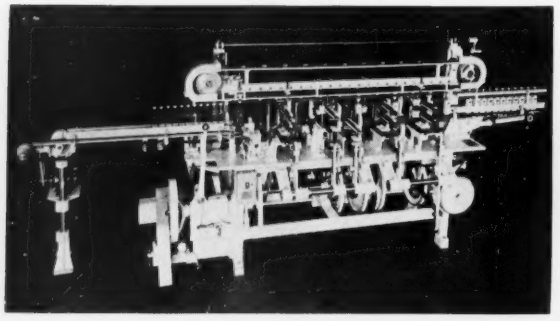
XUM



6. Semi-automatic labeler capable of labeling flat, oval or round packages and objects in wide range of sizes. Courtesy The Edward Ermold Co.



7. Automatic all-around spice can labeling machine. Photo courtesy Pneumatic Scale Corp., Ltd.



8. Front, back and neck labeler operating at speed of 60 containers per minute. Front and neck labels extend around package sides. Courtesy Pneumatic Scale Corp., Ltd.

fully automatic models, the difference being broadly as to whether the package is brought to the applying station manually or mechanically.

Methods 1 and 4, mentioned before, are employed for semi-automatic or hand-fed machines, whereas all four methods are used in the automatic labelers.

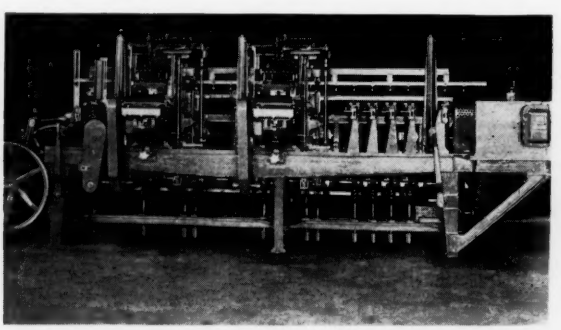
Semi-Automatic or hand-fed labelers on the market today are capable of offering the user capacities from 30 to 60 labels per minute. The production, however, must of necessity depend on the article itself, on the dexterity and application of the operator and the plant management in bringing the articles to, and carrying them away from, the machine. In the majority of cases, this is done by conveyors running in front of (but not interfering with) the operator, or alongside of the attendant. Inspection and packing should be done immediately after the operator removes the labeled article from the machine and, in the choice of the labeler, this feature should be strongly considered so as to eliminate unnecessary and costly handling charges.

There are semi-automatics on the market capable of applying more than one label onto the package at one time and applying the foil onto the neck of the bottle, as used in the "soft" drink industry. They are capable of handling articles which the larger and faster fully automatic machines could not be capable of, such as delicate perfume vials, serum tubes and other highly fragile articles; also the handling of such items as cartridge fuses and battery tubes.

The labeling of paper boxes with paper or paper-backed foil labels or heavily embossed metallic seals, the manufacture of greeting cards, calendars, photomounts, the labeling of cigar boxes, wooden articles, attaching of paper handles to drinking cups, certain types of transparent material to folding box windows, etc., can be accomplished by some of these semi-automatic models.

Automatic labelers can be segregated into two divisions; (1) the rotary type, (2) the straight line.

The rotary type of fully automatic labeler uses method No. 1 and method No. 4 for the application of the label and, as mentioned under the semi-automatic heading, it is also capable of applying more than one label simultaneously, together with the foil neckband if desired. Consequently, it is particularly adaptable to the soft drink, beer, ale and other similar industries.



9. High production double or tandem type straightaway labeler. Photo courtesy Economic Machinery Co.

XUM

WHEN THE PROBLEM REQUIRES HIGH SPEED, ACCURATE LABELING, THE ANSWER IS . . .

Liquid LABELING MACHINES

CONSISTENT AWARD WINNERS



The same kind of accurate, quality labeling that helps win high honors in package competitions, is yours in Liquid Labeling Machines. Year after year this equipment has appeared in the All-America awards to both packages and packaging lines. Each of the awards, some of which are pictured above, shows a high degree of merit.

Such consistent performance speaks for itself. It suggests that you, too, discover what Liquid Labeling Machines can do for you in improving the appearance of your product and speeding up the labeling operation.

A letter from you will bring you complete information.

A HALF CENTURY OF EXPERIENCE

Fifty-one years ago The Liquid Carbonic Corporation was founded for the manufacture of carbonic gas in steel cylinders. By the early 1900's the Company had branched out into the building of equipment for beverage manufacturers. Since that time, it has faced the development of rapidly growing industries with equipment designed to meet new and changing requirements. Today, hundreds of labeler installations attest the quality of the Liquid Labeling Machinery.



Wide range of types

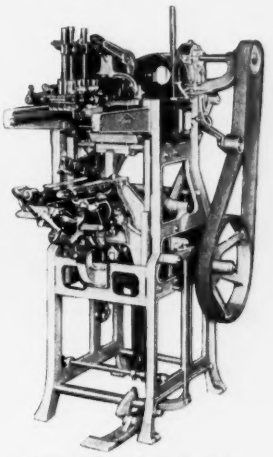
LIQUID *Semi-Automatic* LABELERS

"Standard" Labeler

A hand fed or semi-automatic machine that will label practically any size of bottle with either body, body and neck; or body, neck and foil (if equipped with foiling attachment). Capacity of the machine is 40 containers per mintue.

"Midget" Labeler

Smaller and simpler model of the "Standard." It will affix a single label on anything from a $^1/_2$-oz. vial up to a quart bottle, provided labels do not go more than half way around bottles. Capacity: 40 containers per minute.



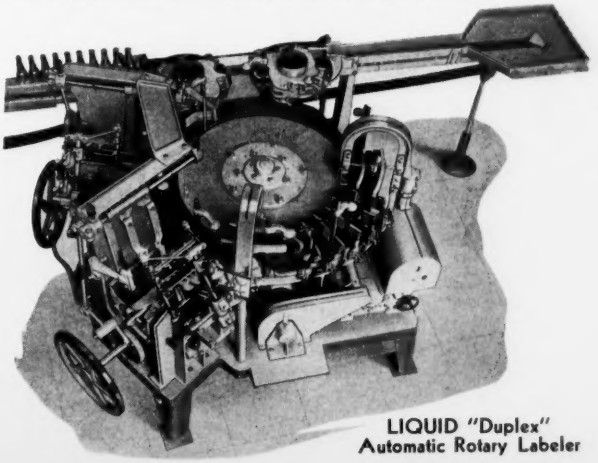
Liquid "Standard" Labeler

LIQUID *Automatic* LABELERS

"SINGLE" Liquid Automatic Rotary Labeler is a smaller model of the "Duplex" shown below. Has eight heads and top grips for receiving and holding bottles; therefore can operate at slow speed assuring accurate labeling without sacrificing high production. Capacity: 80 containers per minute.

"DUPLEX" Liquid Automatic Rotary Labeler is a large capacity machine, handling 120 containers per minute. Extra capacity over the "Single" is the result of ten heads instead of eight and two sets of label fasteners instead of one.

"DOUBLE" Liquid Automatic Rotary Labeler affixes a body label to both sides of the container. It is similar to the "Single" machine, having eight heads and capacity of 80 bottles per minute.

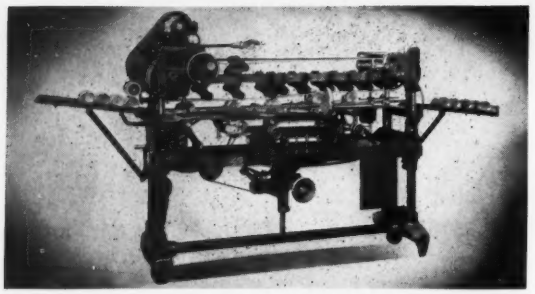


LIQUID "Duplex" Automatic Rotary Labeler

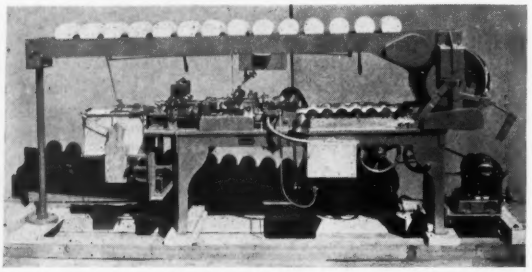
THE LIQUID CARBONIC CORPORATION

General Office: 3100 S. Kedzie Avenue, Chicago, Illinois

23 OFFICES ASSURE NEXT DOOR SERVICE EVERYWHERE



10. Heavy duty round can labeling machine. Photo courtesy Standard-Knapp Corp.



11. Tight-wrap labeling machine for round cans. The label holds on the caps. Photo courtesy J. L. Ferguson Co.

The bottles are taken from a conveyor by means of a star wheel or similar mechanism and timed through the machine. They are automatically ejected onto a conveyor and led away from the equipment to be inspected, packed or stored. They can attain speeds of 85 to 90 per minute.

The straight line type, being of more recent design, can be used more universally as its construction allows a wider latitude in the shape of the containers and greater accuracy in the "spotting" of the label. All four methods described above are used in the feeding and attaching of the labels. Further, their design allows the adhering of front and back labels simultaneously and, by duplexing (i.e., labeling two articles at a time), higher speeds are obtained than with the rotary type. Productive capacities of 120 per minute are obtainable.

Special units are built for a wide variety of requirements, such as labeling both ends of a spool of thread, applying labels to one or both ends of a cardboard shoe box or hosiery box, applying all-around labels to rectangular spice canisters, to mention a few.

In choosing the type of labeler, certain essential points should be borne in mind:

1. The type of label material to be handled—whether plain paper, varnished or lacquered, or foil labels or metallic seals.
2. Whether the label is rectangular or odd shaped.
3. The type of bottle, jar or package to be labeled.
4. Range.
5. Ease of changing from one size to another.
6. Cost of change parts and their simplicity.
7. Control of the adhesive application.
8. The cleanliness of the labeling job.
9. The accuracy of the labeling job.
10. Accessibility of the machine.
11. Productive capacity.

Round Can Labelers

The labeling of round cans, such as are used by the food, paint, soap, lubricant and other industries, presents a problem which is different from the general labeling as described above. The label as used on this package is of the "wrap around" type, the extremities lapping over each other. Consequently, for this purpose, round can labelers have been designed, both of the semi- or hand-fed and fully automatic types.

There is a distinct difference in these two types in that the former covers the label with adhesive over its entire surface, the latter applying adhesive partly to the can body and only to the glue lap of the label. Aside from this, there is also a great difference in the production capacities of the two types.

In the semi-automatic machine, the can as well as the label are introduced manually and the finished article ejected by hand as well. Production, as on all hand-fed machines, again depends on the operator, so that from 4000 to 6000 cans can be labeled per eight-hour day, the variance depending on the size of the package, the facility of bringing the work to, and taking the work away from, the machine and, as stated, the dexterity of the operator.

These machines have fairly large ranges and require no change parts, the range being self-contained. They are well adapted to small runs, frequent changes and for packages requiring the label to be adhered over the entire body surface.

In the fully automatic round can labelers, the cans roll down a track and have "spots" of adhesive applied. These "spots," when the can passes over the label hopper, pick up the label which is then wrapped around the can, the label having a glue strip applied to the lap. This glue strip forms the closing joint. Pressure is applied to insure adhesion between the can and the label.

As regards production, these machines, on an average, handle between 250 and 500 cans per minute, 600 to 800 is not infrequent and, in some isolated cases, over 1000 per minute are handled. Round can labelers, of course, can also handle round bottles with certain limitations and paint cans with "ears" for handles.

In preparing labels for these machines, to get the best results the grain of the paper should run parallel to the longest dimension.

Label Gummers

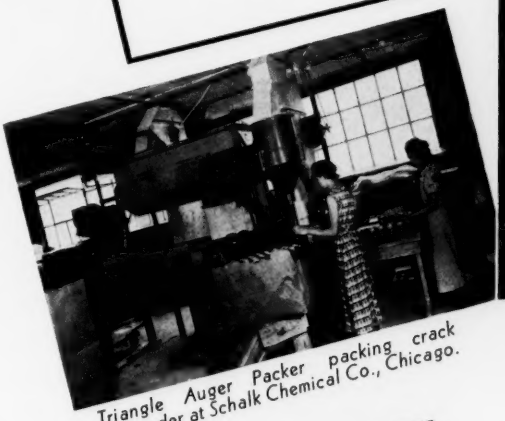
Label gummers are not truly labeling machines, for they are not used to actually apply the label to its point of final contact with the package. Their function is, rather, to apply a gummed coating to an uncoated label, or to moisten a pre-gummed label and thus to facilitate hand application.

A number of types and variations are available, but all have the general characteristic of a motor drive rotating a cylinder partially immersed in, or in contact with, glue or gum or water.

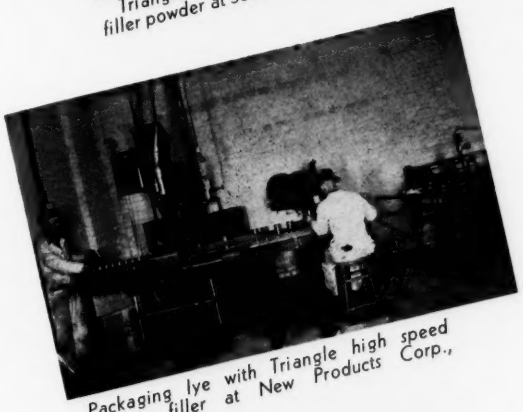
TRIANGLE *Simplified* PACKAGE MACHINERY



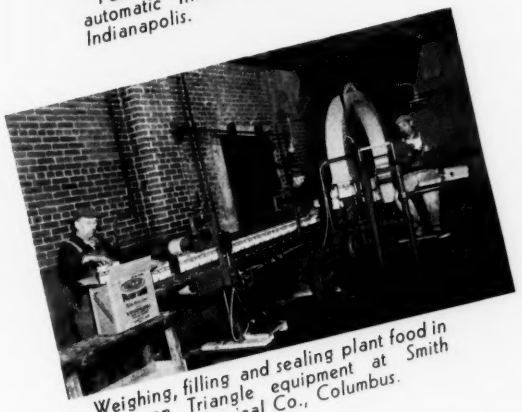
Weighing and filling marshmallows in cellophane bags with ELEC-TRI-PAK machine at Brock Candy Co., Chattanooga.



Triangle Auger Packer packing crack filler powder at Schalk Chemical Co., Chicago.



Packaging lye with Triangle high speed automatic filler at New Products Corp., Indianapolis.



Weighing, filling and sealing plant food in cartons on Triangle equipment at Smith Agricultural Chemical Co., Columbus.

Automatic and Semi-Automatic

CARTON SEALERS
AUGER PACKERS
VOLUMETRIC FILLERS
NET and GROSS WEIGHERS

for

Packaging dry materials in cartons, bags, cans, bottles, envelopes

TYPICAL USERS

Quaker Oats Co.	Kroger Grocery & Baking Co.
Swift & Company	General Foods Corp.
Allen B. Wrisley Co.	Queen Anne Candy Co.
Canada Packers, Ltd.	National Biscuit Co.
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Northrup King & Co.	Sherwin-Williams Co.

For details, specifications, prices, recommendations, write to:

TRIANGLE PACKAGE MACHINERY CO.

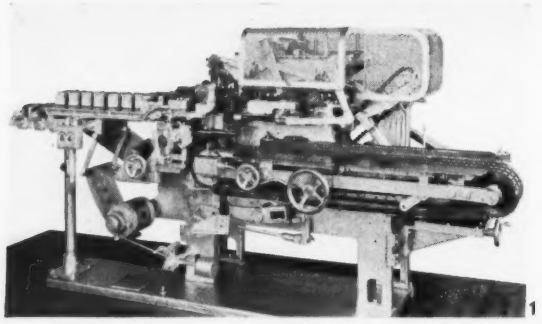
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CLEVELAND: 5927 Euclid Avenue
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FOREIGN OFFICE: New York, 44 Whitehall Street
CANADA: 208 King St. West, Toronto.

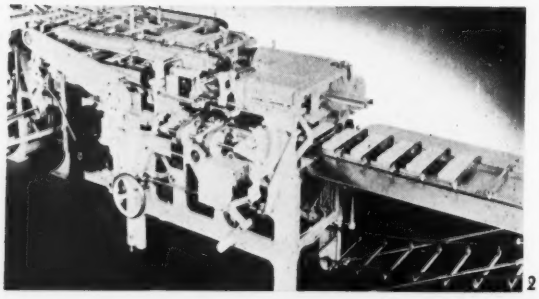
XUM

Automatic (Loose) Wrapping Equipment

by OTTO HALBACH, JR.*



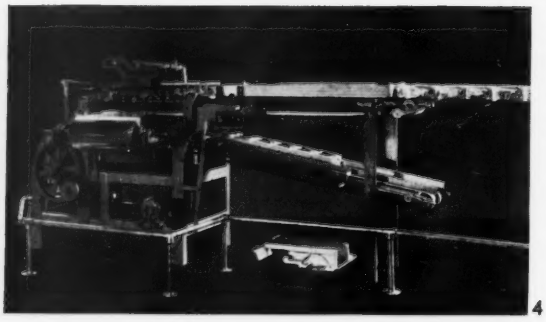
1



2



3



4

1. Yeast cake labeler. Speed 60 per min. Courtesy Battle Creek Wrapping Machine Co. **2.** Waxed paper labeler for individual wafers. Courtesy Battle Creek Wrapping Machine Co. **3.** Automatic cake wrapper with band labeling attachment. Courtesy Johnson Automatic Sealer Co., Ltd. **4.** Heat sealing adjustable package wrapper with photo electric registration unit. Courtesy Hayssen Manufacturing Co.

Wrapping machines, in their infancy, were confined to the wrapping of uniformly shaped containers such as cartons and boxes and were heavy, clumsy affairs, operating at low speeds. Since then, new ones have been developed to wrap almost any type of package imaginable. Yet, in the advancement of the wrapping industry, the older style wrapping machines have not been discarded entirely, but have been improved and modernized. Changes have been made to adapt them to the use of new types of wrapping materials, such as transparent cellulose, glassine and foil, as well as paper and waxed paper. The electric eye method of registration has made possible the use of all types of wrapping materials in printed roll form, although the machines will also handle cut-to-size sheets fed from a stack. The range of the machines has been extended, making it possible to wrap as many as a dozen or more sizes of packages on one machine. The speed of the machines has also been increased and the use of handwheels has simplified the problem of quick adjustability.

The wrapping of packages can be divided into two broad groups: loose wrapping and tight or wet wrapping, so called because the inside surface of the wrapper is covered with glue. Wet wrapping has taken its place in the wrapping of cartoned goods such as soap powder, salt, sugar, cereals and other food packages, because of its ability to prevent insect infestation and leakage. Nevertheless, because of its practicability and adaptability, loose wrapping has come into wide general use.

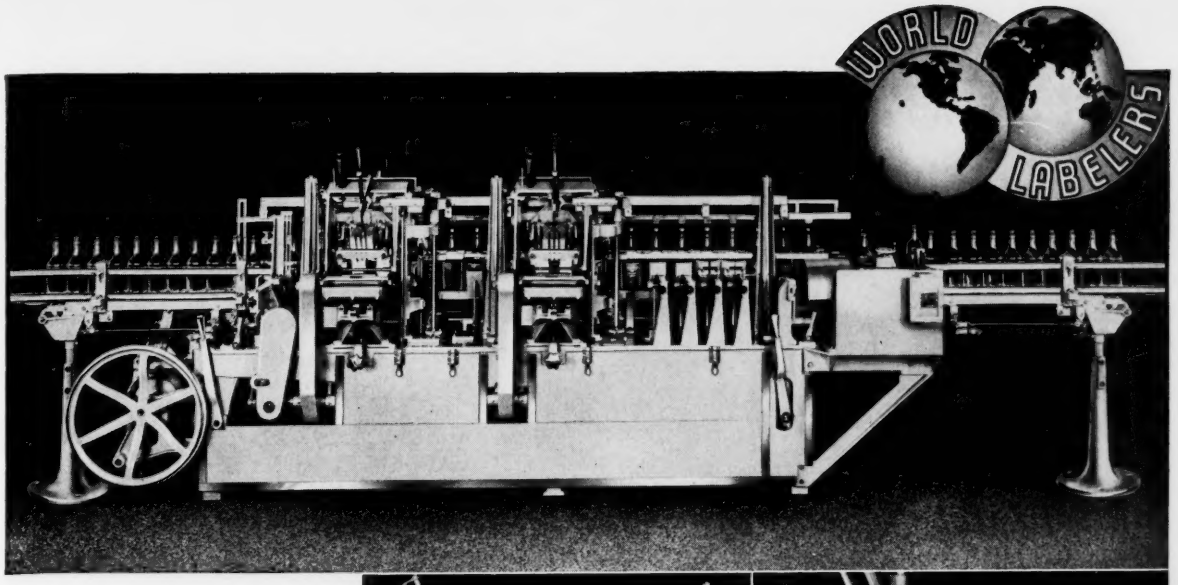
At present, more and more producers are realizing that the sales value of a package is considerably enhanced when that package is securely wrapped and sealed. In addition, this package must retain its attractiveness after the outer wrapper has been removed. The loose overwrap is the answer. Especially is this true in the confectionery trade where, in most cases, a fancy box is overwrapped in some kind of transparent material. Moisture-proof cellulose can be used where a fairly airtight, moisture-proof package is required.

When private brands for different customers are to be handled, plain cartons may be wrapped in printed materials or in unprinted wrappers and labels, for identification and appearance. The loose wrappers can be held in place on the cartons by means of thin glue lines applied automatically, which will prevent the wrappers' slipping from the cartons after they have been opened.

The loose wrap lends itself especially well to the placing of a circular or premium between the box or carton and the outer wrapper and where a revenue or tax stamp is necessary, as in the case of cigarettes. Provisions have

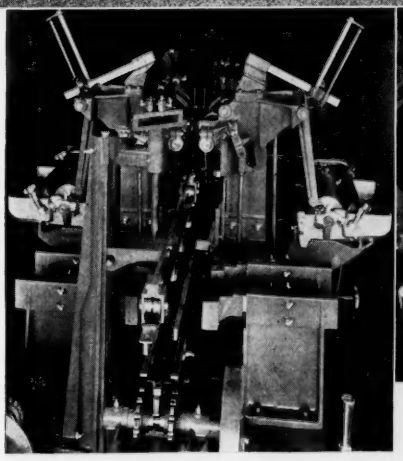
* Package Machinery Co.

XUM

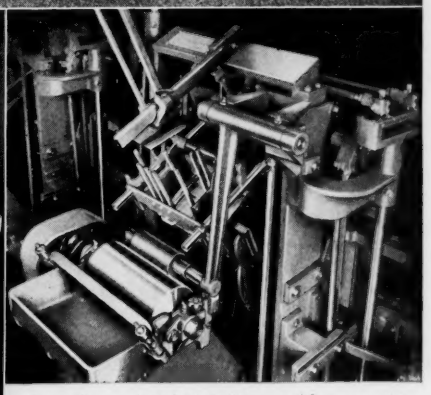


Model HS High Production World Automatic Straightaway Labeler (Double) applies front and back labels at one operation on flat, square, round, oval or panel bottles, flasks and other packages.

Distinctive labeling mechanisms—Overhead Bottle Grip Support... Sliding Picker Mechanism ... Double Wiping System ... Operating parts readily accessible ... Bottles labeled in upright position ... Automatically timed and positioned with each label fixed accurately and firmly.

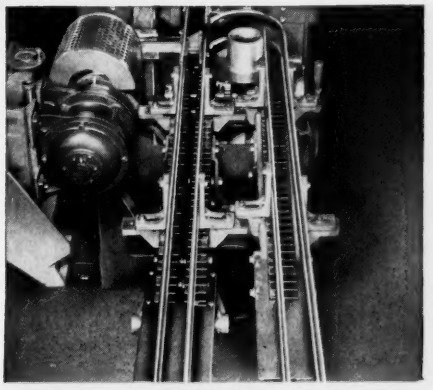


Overhead bottle gripping mechanism controls each bottle through labeler; plungers compensate for slight variations in bottle heights.



Gum Box and Label Holder readily accessible to operator. Sliding Pickers gum the entire surface of the label.

WORLD AUTOMATIC STRAIGHTAWAY LABELER



Two lines of bottles carried from the discharge end. Steady handling of labeled packages, marked reduction in labeling costs.

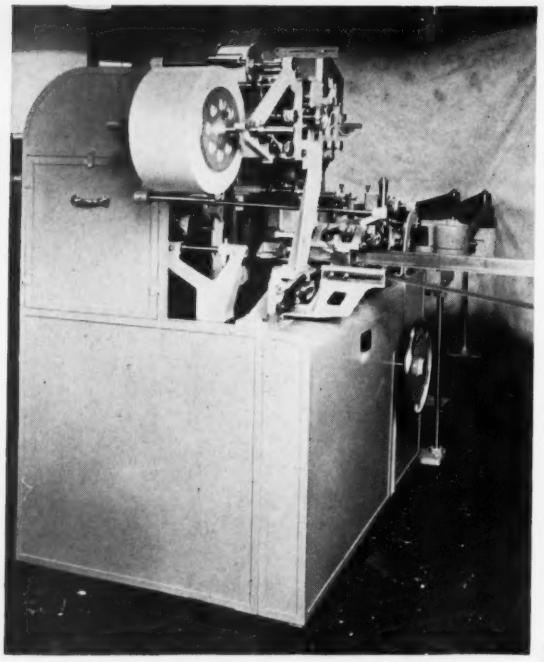
ECONOMIC MACHINERY COMPANY

MAKERS OF COMPLETE LINE - WORLD AUTOMATIC AND SEMI-AUTOMATIC LABELERS

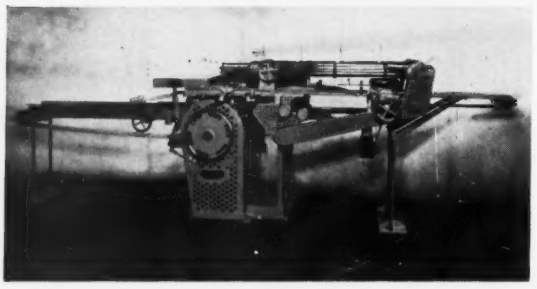
Worcester, Massachusetts

NEW YORK BALTIMORE PITTSBURGH CHICAGO SAN FRANCISCO LOS ANGELES SEATTLE PORTLAND
LONDON MONTREAL TORONTO WINNIPEG VANCOUVER SYDNEY, AUSTRALIA WELLINGTON, N. Z.

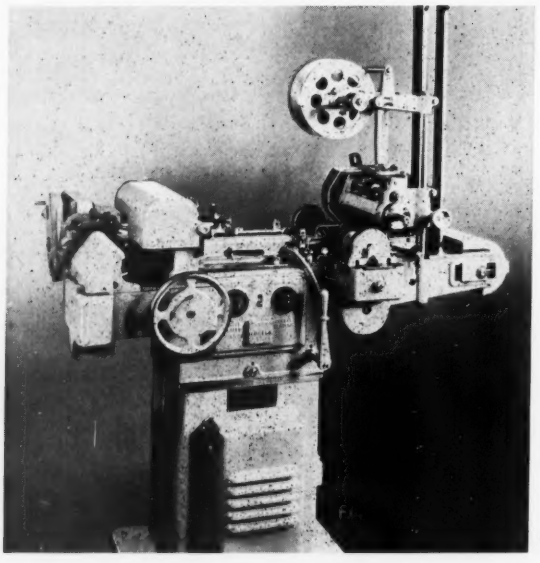
XUM



5



6



7

5. High speed soap tablet wrapper feeds either from magazine or from roll with electric eye register. **6.** Full automatic highly adjustable wrapper equipped with electric eye register unit. **7.** Full automatic constant motion wrapper runs at speeds up to 380 per minute. Photos courtesy Package Machinery Co.

been made on many automatic wrapping machines to make the feeding of the circular from a magazine a part of the wrapping operation.

The greatest advantage of the loose wrap is, of course, that it can come in contact with the article to be wrapped without the need of an inner protective covering. Individual pieces of candy are cut and sized on the same machine and then wrapped in transparent cellulose or waxed paper with the ends folded or twisted. Irregular pieces of chocolate candy are wrapped in foil. Many different sizes and shapes of candy bars are wrapped in cellulose, paper or waxed paper and the addition of the electric eye makes possible the use of printed wrappers in roll form. Various kinds of pops are now being wrapped in waxed paper or heat-sealing cellulose on automatic machines. Bread and cakes, too, and bars of soap lend themselves equally well to the loose overwrap, as do, also, towels, paper napkins, cigars, yeast and countless other articles.

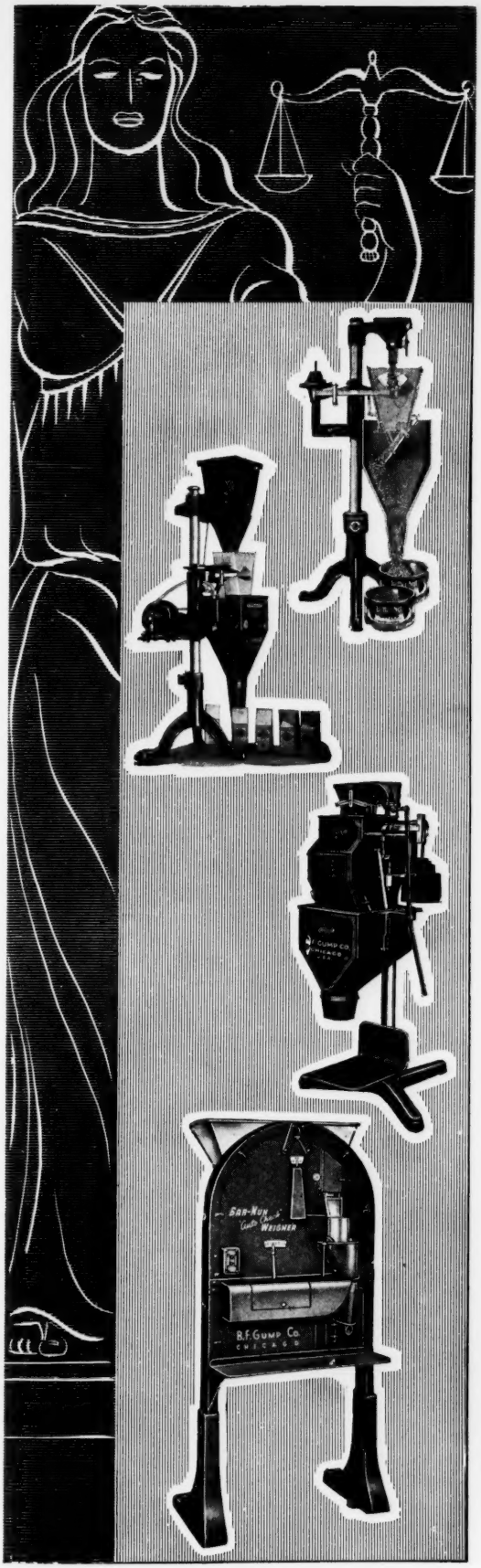
It is only recently that the use of automatic wrapping has been considered in the frozen foods industry and here the loose wrap is necessary. A wrapper which can be heat-sealed will withstand the low temperature conditions necessary in packaging and preserving frozen foods and waxed paper or heat-sealing cellulose is used. Both of these materials are, of course, obtainable in printed roll form and the electric eye can be used to register the printed panels properly.

Other uses have also been found for carton and box wrapping machines. Automatic bundling of cartoned merchandise is a comparatively new development and is very popular with the manufacturer who is confronted with the problem of distributing his goods economically. The cost of paper wrappers is considerably less than that of pasteboard containers and the lower weight of paper as compared with the pasteboard will materially reduce shipping costs, especially where the shipping distance is fairly substantial.

Another new adaptation of box wrapping machines is the manufacture of bags of transparent cellulose material. The bags are formed on wooden mandrels and are stripped from the mandrels at the discharge end of the machine, ready to be filled. Here again, the electric eye makes possible the use of printed material in roll form. Provision can also be made to place a sticker on the inner or outer surface of the bag for identification purposes. The simple procedure of feeding the mandrel through the machine twice, without removing the first bag, will result in a double bag, of double strength. The bags produced in this way have the advantage of not being folded and stored away for long periods of time prior to use, a procedure which is claimed to weaken ready-made bags considerably. Extra parts can also be provided to permit the use of the machines as box or carton wrappers, when the bag production is not sufficient to keep the machine running at full capacity.

The advancement of machine wrapping has also resulted in the development of many new machines of a more specialized nature than those described above. Included in this group are machines for wrapping cakes of soap, bars and pieces of candy, individual cubes of sugar,

XUM



FROM AS LITTLE AS 1/4 oz., up to 75 lbs. PER DISCHARGE

THERE'S AN EDTBAUER-DUPLEX or BAR-NUN TO MEET PRACTICALLY EVERY WEIGHING REQUIREMENT FOR DRY, POWDERED OR GRANULAR MATERIALS

FOR FREE FLOWING MATERIALS

Edtbauer-Duplex Gravity Feed Automatic Net Weighers, Nos. 1, 2, 3, and 4 are recommended for weighing all materials of free flowing characteristics such as whole bean or coarse ground coffee cereals, cornmeal, scratch feeds, granulated sugar, salt, rice, etc. They are accurate, speedy and simple to adjust from one weight to another. Four sizes offer a range for weighing from 3 ounces to 75 pounds per discharge.

FOR NON FREE FLOWING MATERIALS

Edtbauer-Duplex Power Feed Automatic Net Weighers, Nos. A0, A1, A2, A3, and A4, are highly efficient for weighing non-free flowing materials such as finely ground or pulverized coffee, cereals, cornmeal, pancake flour, rolled oats, mash feeds, chemical powders, calcimine, plaster, mineral fertilizer, etc. Five sizes offer a range for weighing from 1 ounce to 75 pounds per discharge.

NO. 10 . . 1/4 OUNCE TO 8 OUNCES

Bar-Nun "Auto-Check" Weighers fill, weigh, and automatically check weigh small packages with extreme accuracy, all in one operation. Accuracy is guaranteed within $\frac{1}{64}$ of 1 ounce plus or minus on pulverized or granular products.

NO. 15 . . 3 OUNCES TO 2 POUNDS

Similar to the No. 10 models, except larger, for handling weights from 3 ounces to 2 pounds per discharge. Speed ranges up to 30 per minute with accuracy guaranteed within $\frac{1}{32}$ of one ounce plus or minus. Check-weighing pointer and dial and beam with positive weight settings, are features of these sturdy, accurate weighers.

THE COMPLETE LINE OF GUMP WEIGHERS

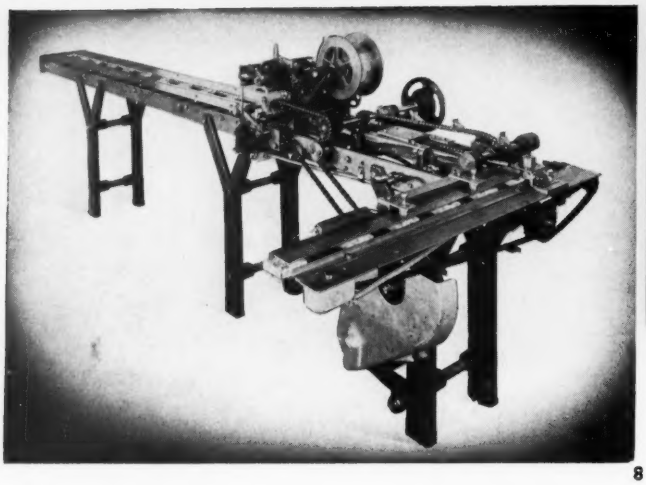
No. 1. Edtbauer-Duplex for weighing 3 oz. to 1½ lbs.
No. 2. Edtbauer-Duplex for weighing 4 oz. to 3½ lbs.
No. 3. Edtbauer-Duplex for weighing 5 to 15 lbs.
No. 4. Edtbauer-Duplex for weighing 10 to 75 lbs.
No. A0. Edtbauer-Duplex for weighing 1 to 8 oz.
No. A1. Edtbauer-Duplex for weighing 3 oz. to 1½ lbs.
No. A2. Edtbauer-Duplex for weighing 4 oz. to 3½ lbs.
No. A3. Edtbauer-Duplex for weighing 5 to 15 lbs.
No. A4. Edtbauer-Duplex for weighing 10 to 75 lbs.
No. 10. Bar-Nun "Auto Check" for weighing ¼ oz. to 8 oz.
No. 15. Bar-Nun "Auto Check" for weighing 3 oz. to 2 lbs.

WRITE TODAY . . . GET COMPLETE INFORMATION!

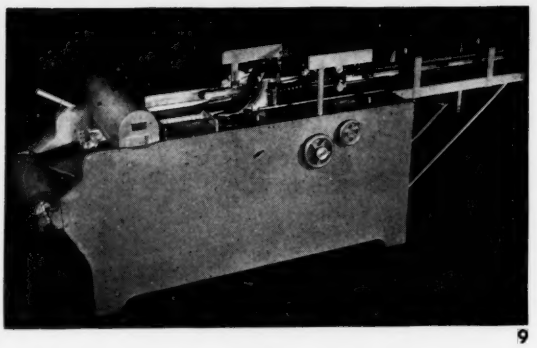
B.F. Gump Co.

ENGINEERS AND MANUFACTURERS SINCE 1872

445 SO. CLINTON STREET CHICAGO, ILLINOIS



8



9

8. Fully automatic constant speed adjustable wrapper with tear tape attachment. Output up to 400 per minute. Courtesy Scandia Manufacturing Co. **9.** Automatic banding machine. Speed up to 35 per minute. Courtesy Miller Wrapping & Sealing Machine Co.

cigars, packages of cigarettes, yeast cakes, fruit drops and mints and many similar articles and packages. All of the popular types of wrapping materials can be handled by these machines and, here again, electric eye registration has been important. The wrapping operation on these machines has also been improved to decrease the amount of wrapping material needed. Especially is this true in the confectionery trade, in the wrapping of candy pops, where the use of a tight twist, heat-sealed, has decreased by about twenty per cent the amount of wrapping material needed.

While box or rectangular object wrapping is an important part of the wrapping machine art, it is only one part. For candy, machines are available to take the candy in plastic form, form it, cut it and wrap it, either with folds or with twisted ends and speeds can be attained up to 500 or 600 a minute. With twisted wrapping, the machine can be arranged so that the twisted ears can be colored and colored inserts can be put inside the wrapper. Old standbys, such as kisses or caramels, can be dressed up now in a highly attractive and salable form and, as a result, the merchandising of candy is taking on a new lease of life.

Recently the wrapping of pound and sliced pound cake in transparent cellulose has become quite prevalent in the East, and, as a new means of merchandising cake, it is becoming popular. To do this economically the cake bakeries have had to set up their production for automatic wrapping as the cost of large batteries of girls for wrapping the cake by hand proved too expensive. An automatic machine which accomplishes this purpose is equipped with a band-labeling attachment and cardboard inserting mechanism.

A newer development along the lines of registration is the use of a miniature printing press, using quick-drying aniline ink and geared to the paper feed of the machine. The press prints material as it is being fed from the roll into the machine. Registration is automatically taken care of, without the use of an electric eye.

The use of strong wrapping materials, such as cellulose, has resulted in the development of easy-opening devices such as tabs, tapes and machine-made nicks to facilitate the opening of the packages. Such devices are now being used extensively on such small packaged goods as cigarettes, fruit drops, and chewing gum.

The wrapping of chewing gum is receiving a great deal of attention at present because of the development of high-speed automatic wrapping machines. A machine is now available to wrap small individual sticks of gum at a speed in excess of 600 a minute. The machine will apply an inner wrapper fed from a roll and a printed band fed in sheet form. A thin strip of adhesive will glue the outer wrapper to the inner and prevent its slipping off the end of the stick. Regular sizes of individual sticks are being wrapped with an inner roll fed wrapper and an outer printed label, at speeds up to 400 a minute.

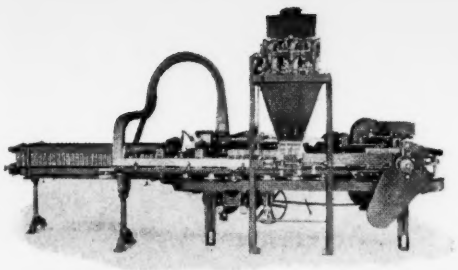
If the individual stick wrapper and a package assembler and wrapper are used together, the complete wrapping job will be a continuous and automatic one.

In considering machine wrapping, three elements always enter the picture—speed, adjustability, and price—and the three have an intimate relation to one another. The more specialized the machine, the higher is possible production, and the more difficult it is to change the size. At one extreme are the high-speed chewing-gum machines just mentioned; at the other extreme are the carton wrapping machines, based on the principle of bread wrappers, where a size change can be made in less than five minutes over a wide range, but whose speed is limited to slower operations.

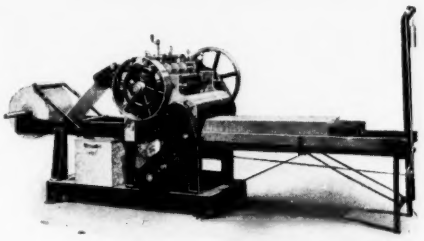
Automatic wrapping machinery is constantly being developed and improved to include all kinds of articles and containers. The producer or manufacturer who has an article to be wrapped is almost sure to find an automatic wrapping machine which will meet his needs and whose price is within his means. Sometimes a potential machine user, whose production of any one line is not large enough to warrant the purchase of a machine for that line alone, will overlook the fact that one automatic machine often will handle all of his sizes, the total output being enough to keep a machine running at full or at least economic capacity.

XUM

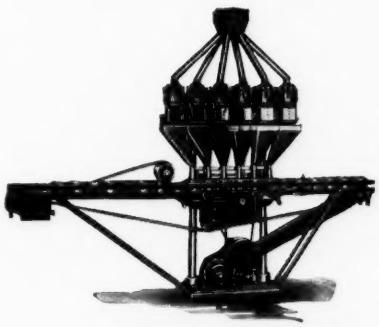
CUT PACKAGING COSTS "THE PACKOMATIC WAY"



PACKOMATIC COMBINED TOP AND BOTTOM CARTON SEALER. 60 OR MORE PER MIN.



PACKOMATIC CARTON MAKING MACHINE. SPEEDS TO 175 PER MIN.



PACKOMATIC SIX-IN-LINE AUTOMATIC NET WEIGHER

- We manufacture many different types of automatic and semi-automatic packaging machines, scales and volumetric fillers and auger packers, for low, medium or high speed production.
- We build machines for making plain chipboard cartons from roll stock. Machines for making round paper cans from roll stock. Paper cap shrinkers and gluers, also round paper can labeling machines.
- We were the first to offer, and still lead the field with a most complete line of automatic and semi-automatic paper shipping case sealing machines.
- We manufacture semi-automatic carton sealers, adjustable carton sealers for a wide range of sizes, and high speed automatic combined Top and Bottom carton sealers.
- For twenty years Packomatic equipment has proved its superiority in the United States and abroad for practical design, sturdy construction and reliable dependable performance.

Expert confidential consideration will be given to your particular problem without obligating you in any way. Phone—Wire—or write for a Packomatic Engineer.

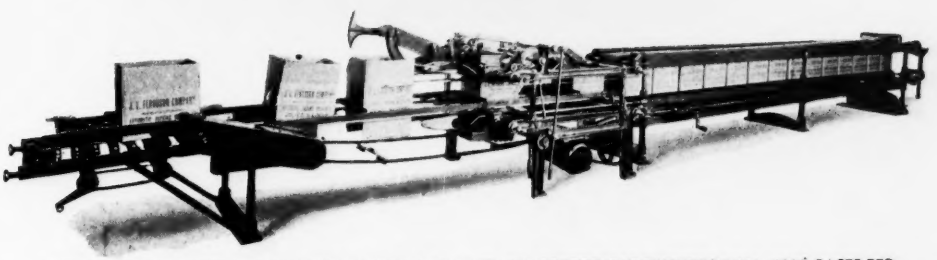


PACKOMATIC AUGER PACKER FOR NON-FREE FLOWING POWDERED PRODUCTS THAT REQUIRE FORCE FEEDING

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PACKOMATIC MODEL "D" SHIPPING CASE SEALER 18 FT. COMPRESSION UNIT SPEEDS 200 to 2000 CASES PER HOUR. NO OPERATOR REQUIRED

Semi-Automatic Wrapping Equipment

by R. H. FREEMAN*

Semi-automatic wrapping machines require a smaller investment and permit extreme flexibility with regard to size and nature of packages. This makes them valuable to both the small and large scale manufacturer. It gives the former all the wrapping equipment he needs and allows the latter an economical means of wrapping his smaller runs, producing novel packages, or testing new packages on the market at little expense.

Versatility of the semi-automatic wrapping machine extends beyond mere "adjustment range." It permits the wrapping of irregular, loose or stacked items or packages, because of close contact of the operator with the folding operation. The odd package can be guided, by hand, just enough to make allowance for its peculiarities. A few examples in this category are packages composed of several loose pieces, such as four bars of soap and a wash cloth, the popular roll type cookie package, cellophane or kraft wrapped bundles of small packages, etc. Soft cakes and other fragile merchandise can also be wrapped without injury.

The semi-automatic machine will wrap with a variety of materials, either heat- or glue-sealed, including heat-sealing cellophane, waxed papers, waxed foil and the non-heat-sealing materials, such as plain transparent sheets, kraft and other ungummed or unwaxed papers. If a manufacturer of pharmaceuticals should desire to wrap his packages first individually in heat- or glue-sealing cellophane, then bundle them by dozens in kraft paper, the semi-automatic would perform both jobs, laying glue on the kraft paper to seal it.

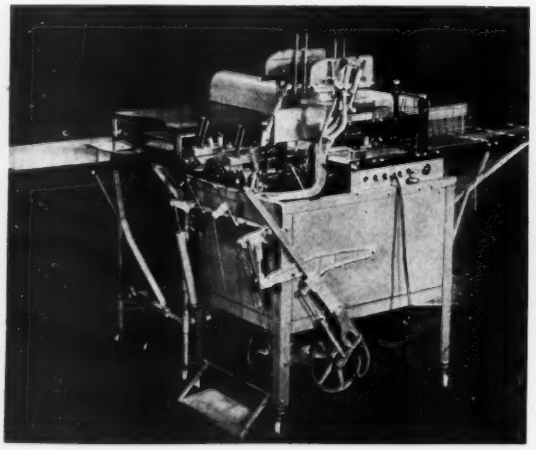
Instant adjustability makes the semi-automatic wrapping machine suitable for very short runs. On a moment's notice, it can be changed over from the smallest to the largest package within its range. Adjustments have been so simplified that a girl operator, unassisted, can make a complete size change, without tools. Simple hand fastenings make this possible.

Speed of semi-automatic machines, while naturally less than those of the full automatic, is adequately high to exceed, by many times, that of hand wrapping and wrapping by means of simple fixtures and jigs. In some cases, particularly where frequent adjustment is required, or where great economies in wrapping materials are possible, the semi-automatic shows even greater savings than the automatic. Each machine has its place and they seldom overlap, so determination of the equipment indicated for any particular job is not difficult.

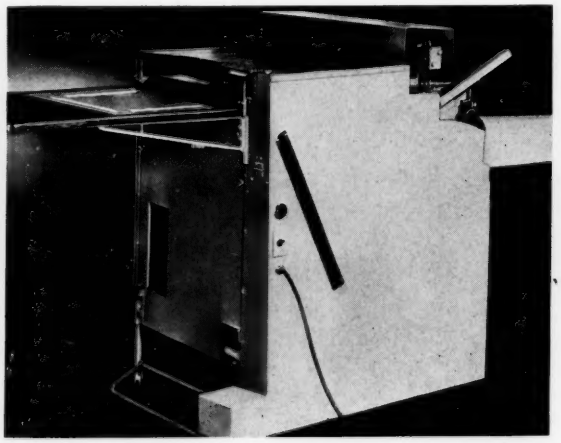
Packages produced on semi-automatic machines are uniformly neat and well sealed, whether with heat or glue. When heat-sealed, the hot plates are kept under thermostatic control, so that there is no injury to either the wrapper or packages. Packages containing heat perishable goods, such as chocolate, butter, icings, frozen foods and the like, can, if necessary, be passed quickly through the heat seal region, so that a seal takes place, but the heat cannot penetrate far enough to be injurious. When glue is used for sealing purposes,

* Miller Wrapping and Sealing Machine Co.

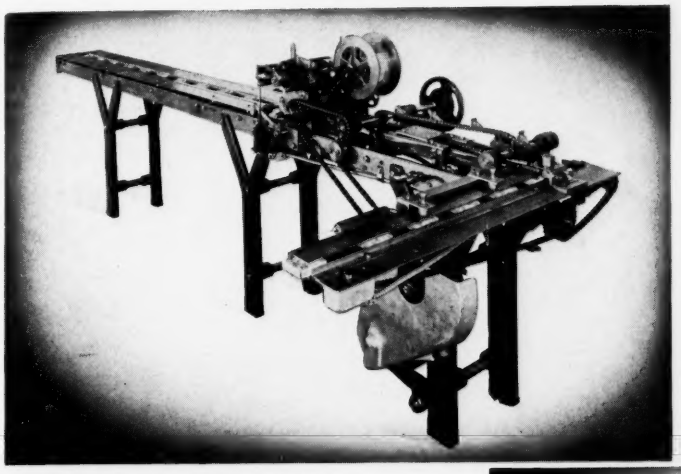
1. Semi-automatic cellophane wrapper equipped with sheet feed device and heat sealing units. Courtesy Miller Wrapping & Sealing Machine Co.



2. Wrap cutting and gluing machine. Cuts and delivers preglued sheets from roll at rate of 35 per minute. Courtesy Miller Wrapping & Sealing Machine Co.



SCANDIA WRAPPING MACHINES



SCANDIA HI-SPEED FULLY AUTOMATIC

Features:

1. Continuous—Constant Speed—Paper Feed
2. Mechanical Corrector or Electric Eye for Printed Paper Registration
3. Tear-Tape Attachments for Speeds up to 300 per minute
4. Paper Cut-Off Knife—Self-Sharpening—Ball-Bearing Mounted
5. Adjustable for various sizes
6. No intermittent Motion—No Cams

Model SFC-1

Specifications:
Speed: 40 to 400 per minute
Weight: 850 pounds net
Motor: ¼ horsepower

SCANDIA UNIVERSAL

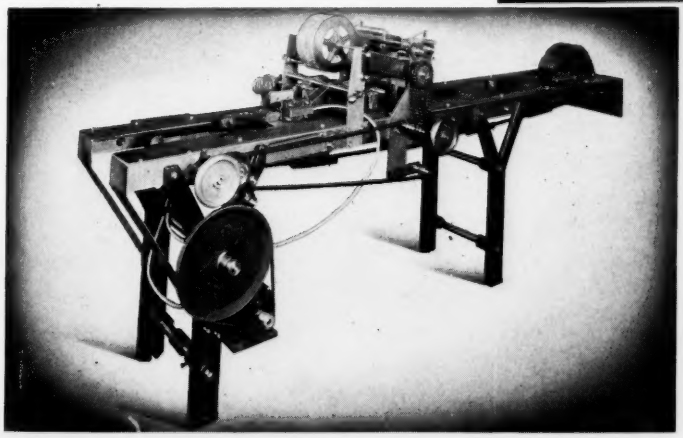
Features:

1. Constant Speed—Paper Feed
2. Mechanical Corrector for Printed Paper Registration
3. Paper Cut-Off Knife—Self-Sharpening—Ball-Bearing Mounted
4. Rotary Motion—No Cams
5. Adjustable for Various Sizes in a few Minutes
6. Package Fully Visible during Wrapping Operations
7. Automatic Speed Control

Model SUS-1

Specifications:
Speed: 25 to 40 per minute
Weight: 700 pounds net
Motor. ¼ horsepower





Model SSU-1

Specifications: Speed: 25 to 50 per minute—Weight: 750 pounds—Motor: ⅓ horsepower

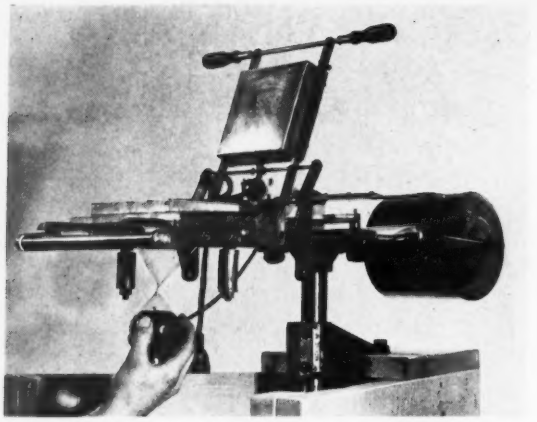
SCANDIA'S NEW UNIVERSAL THE "BAKER'S SPECIAL"

LOWER PACKAGING COSTS—GREATER SAVINGS—MAXIMUM PRODUCT VISIBILITY

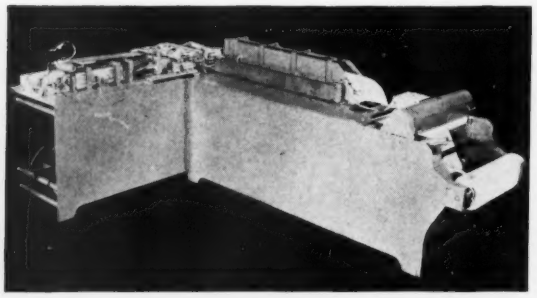
The BAKER'S SPECIAL, especially designed to wrap irregular bakery products, is equipped with 3-sided metal formers which eliminates the use of expensive cardboard trays and collars necessary for present day wrapping machines. The BAKER'S SPECIAL SAVES UP TO 50% paper over handwrapping plus the savings of trays and collars. The BAKER'S SPECIAL is a CONTINUOUS—ALL ROTARY wrapping machine with NO RECIPROCATING MOTIONS & NO CAMS. SIMPLICITY in design and rugged construction insure long life and low maintenance cost. It is ADJUSTIBLE FOR VARIOUS SIZES and requires 5 to 15 minutes to change over.

SCANDIA MANUFACTURING COMPANY
BELLEVILLE TURNPIKE NORTH ARLINGTON NEW JERSEY

XUM



3. Stretch wrap machine for Pliofilm wrapping. Material feeds from roll and is heated under electric plates. Product is then placed into position and twisted to form the seal. Courtesy Stokes & Smith Co.



4. Hand fed bundling machine. Operator places packages on machines cut sheet and group then rides through folding and sealing section. Capacity 10 to 12 bundles per minute. Courtesy Miller Wrapping & Sealing Machine Co.

the amount of flow and area of application can also be positively controlled, so that results are unerringly the same and the machine user can have confidence in the uniformity of his product, both in appearance and protection afforded by the wrapper.

Bottle wrapping is another achievement of the semi-automatic wrapping machine. Using many of the principles of the package-wrapping machine to retain the valuable feature of adjustment for many sizes, this equipment also provides a clever means of neatly tapering the cellulose wrap from shoulder to cap of bottles. Here too the hand work is very limited. The cellulose sheet is simply placed around the bottle, the bottle and sheet set in the wrapping machine and a lever tripped.

Ordinarily, the semi-automatic machine folds and seals the wrapper over the bottom and two ends of the package, in the manner that an ordinary biscuit carton is usually wrapped. However, where a very shallow package is to be wrapped, where the ends do not offer sufficient depth for a satisfactory end seal, the end folds can be tucked under the ends of the package, or "underlapped." This feature is useful on flat packages, such as cake slices, sheets of writing paper and even extension edge candy boxes, which are recessed at the sides and ends so that a conventional seal is impractical.

The semi-automatic wrapping machine can also be furnished with a number of money-saving attachments, such as a coding device for perforating letters or numbers in the wrapper, a banding attachment for attaching printed bands of cellophane or waxed paper to the wrapper—saving a labeling operation, and an inexpensive compensator for regulating the cut-off of printed wrappers with "spot" or located design.

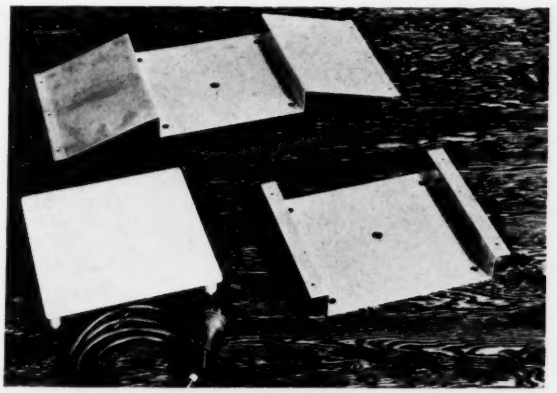
To sum up, the cost, wide adjustment range, ease of adjustment and extreme versatility of the semi-automatic wrapping machine recommend it wherever lowest cost wrapping is the aim of the producer.

Hand Wrapping Fixtures

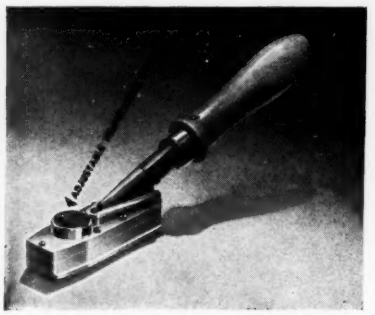
A number of simple and inexpensive tools have been developed, in recent years, to aid hand operators in wrapping heat-sealing materials. These include hot plates of various types, upon which a package may be placed momentarily to achieve a seal. Where line seals or spot seals are desired, special heating irons, equipped with thermostatic controls and similar in appearance to soldering irons, are sometimes utilized.



5. Heat sealing plate with ramps to facilitate package movement. Courtesy Oliver Machinery Co.



6. Heat sealing plate with ramp and table inset attachment. Courtesy Miller Wrapping & Sealing Machine Co.



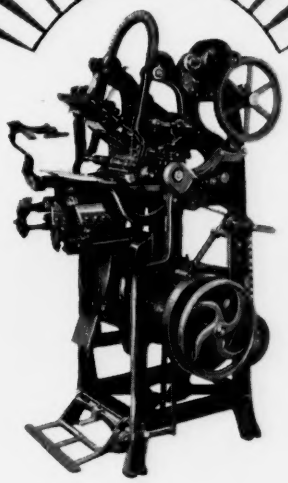
7. Package sealing iron with automatic temperature control. Photo courtesy Wells Manufacturing Co.

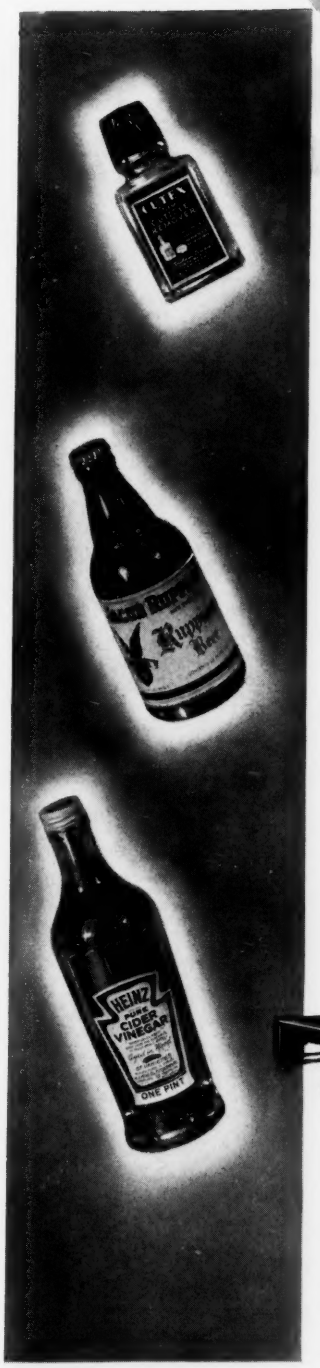
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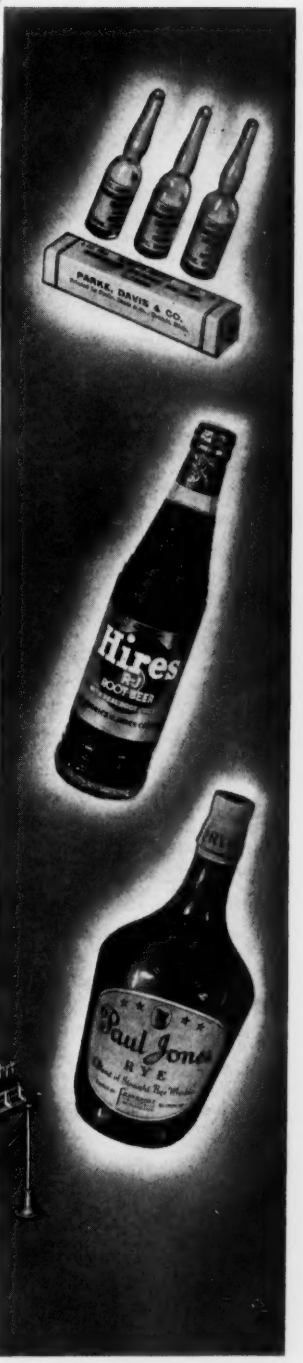
THE SUN NEVER SETS

on

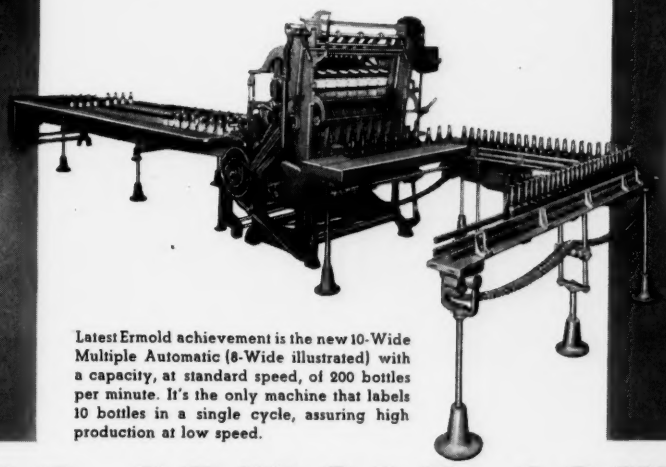
ERMOLD LABELERS







In nearly every corner of the world—wherever packages are labeled—Ermold Labelers have achieved a record for capacity, character of work, rugged construction, and high efficiency. Whether it's the fine precision required to label ½ cc ampoules—or the range needed to label pails and tubs reaching 24-inch diameter—or large outputs up to 200 bottles per minute, there's an Ermold that fits the picture. Into every Ermold is built 60 years' labeling progress.



Latest Ermold achievement is the new 10-Wide Multiple Automatic (8-Wide illustrated) with a capacity, at standard speed, of 200 bottles per minute. It's the only machine that labels 10 bottles in a single cycle, assuring high production at low speed.

EDWARD ERMOLD COMPANY

HUDSON, GANSEVOORT AND 13th STREETS • NEW YORK, N. Y.



1. Typical tight-wrap packages. Note that this type of package construction is particularly suited for widely sold, mass produced granular and flake products where sifting must be avoided and a high degree of protection for the product is essential.

Tight-Wrapping Equipment

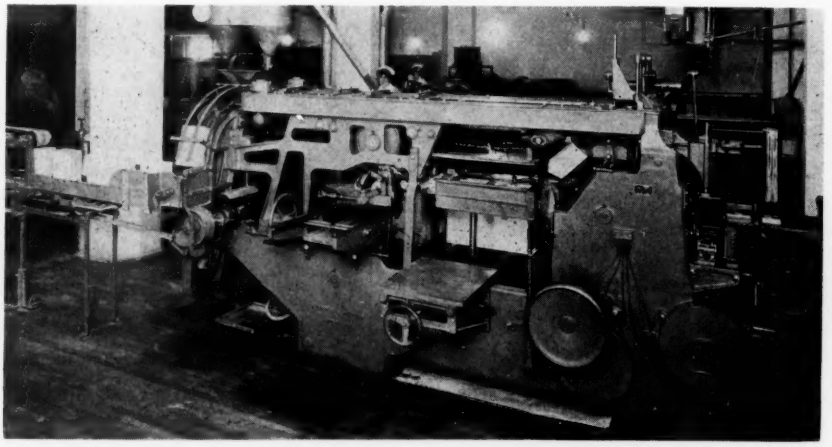
by CARL E. SCHAEFFER*

Tight-wrapped packages are standard with many manufacturers and packers of food and grocery products. First adopted a number of years ago by some of the cereal manufacturers, where its greatest advantage was in keeping the weevil from getting into the contents, the tight-wrapped package has been adopted for use with many other products, such as flour, soap powders, salt, coffee, cereals, etc.

With the tight-wrapped package the plain unprinted cartons are filled and sealed in the regular way, there being a number of different makes of semi-automatic and full automatic carton filling and sealing machines on the market. After the carton is filled and sealed it is fed into the tight-wrapping machine which automatically feeds the paper label as the carton enters the wrapping machine, glues the label all over on the blank side with a thin coating of adhesive and wraps it tightly around the filled carton, making a perfectly tight-sealed, non-sifting, weevil-proof and attractive package.

Various types of cartons with inside bags or liners can be used with the tight-wrapped package, as well as dif-

* Stokes & Smith Co.



2. Tight wrapping installation at a Western Milling plant. Courtesy Stokes & Smith Co.

XUM

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ferent types of opening devices. In the salt industry the tight-wrapped package is now being used by many of the leaders, and one of the most satisfactory salt packages is a carton made of asphalt-lined board which is tight-wrapped on the outside. For coffee, wax or parchment-paper liners are generally used on the inside of the carton and the cartons are tight-wrapped on the outside. For flour, the regular chipboard carton is used and some of the packers have these made with a blue lining on the inside which gives a whiter appearance to the flour. Various combinations of cartons, liners, and labels can be used to insure the product getting to the consumer in the best possible condition of presentation.

Another advantage of the tight-wrapped package is for the packer or manufacturer who packs private-label brands for different customers. If he uses the tight-wrapped package he can use the same carton and merely have different labels for the different brands. This means a saving as it is not necessary to carry a number of different printed cartons on hand. With the tight-wrapped package various types of labels giving different styles of end folds can be used to suit the conditions. Some labels are die-cut so that each end-flap of the label is glued down separately. Others are rectangular, making a gusset fold on the end. For the usual tight-wrapped package, the labels are printed on a 40- or 50-lb. machine-finished paper.

Varnished Tight Wraps

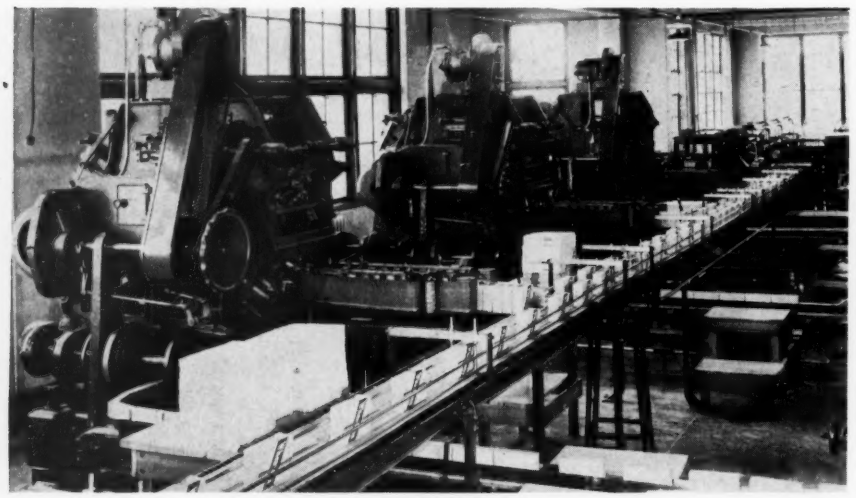
Recently the varnished label has been adopted by a number of packers and manufacturers using the tight-wrapped package, and the package tight-wrapped with the varnished label makes an ideal container for many food and grocery products. The varnished surface makes the package attractive, the colors show up to advantage, and the varnished surface will not accumulate dirt or dust as quickly. Also, the package is more moisture-proof as the varnish gives the extra coating on the outside. Another variation of the tight-wrapped package is the one wrapped with a metal-foil wrap. In this case the labels are made of metal foil laminated on paper so that the outside of the label is the printed metal foil and the inside is paper which can be glued uniformly to the carton. Laboratory tests have shown that this style of package is one of the best for protection against moisture, grease, light and other hazards.

Another recent development combines the advantages of tight-wrapping and wax-wrapping at considerably lower cost. This is accomplished by printing and waxing only one side of the sheet of paper, and gluing the underside to all four sides and top and bottom of the plain carton. This development has been made possible through the perfection of electric-eye methods of registration which permit roll-feeding of printed the and waxed stock. Roll-feed and electric-eye registration can also be applied to regular unwaxed tight wrappers, and this is an advantage because under certain conditions roll-printing is less expensive than printing in sheets.

Adhesives

Various kinds of adhesives can be used to suit the requirements. For the ordinary paper tight-wrapped packages a cold vegetable dextrine adhesive soluble in water is used. For varnished and foil wraps there are several kinds of moisture-proof adhesives and also Latex adhesives on the market. Some of these can be used cold and others require heat or a special solvent for running in the gluing unit which is integral with all types of tight-wrapping machines.

The machines for tight-wrapping packages are built in different styles and types to suit the conditions. There is a semi-automatic machine which is hand-fed and adjustable for different sizes and has a production of 10 to 15 tight-wrapped packages per minute. Then there is the fully automatic machine usually built for one size package to be wrapped and which has a production of 60 to 70 tight-wrapped packages per minute.



3. Battery of tight-wrapping machines delivering wrapped cartons to a collecting conveyor. Photo courtesy of the Pneumatic Scale Corp., Ltd.

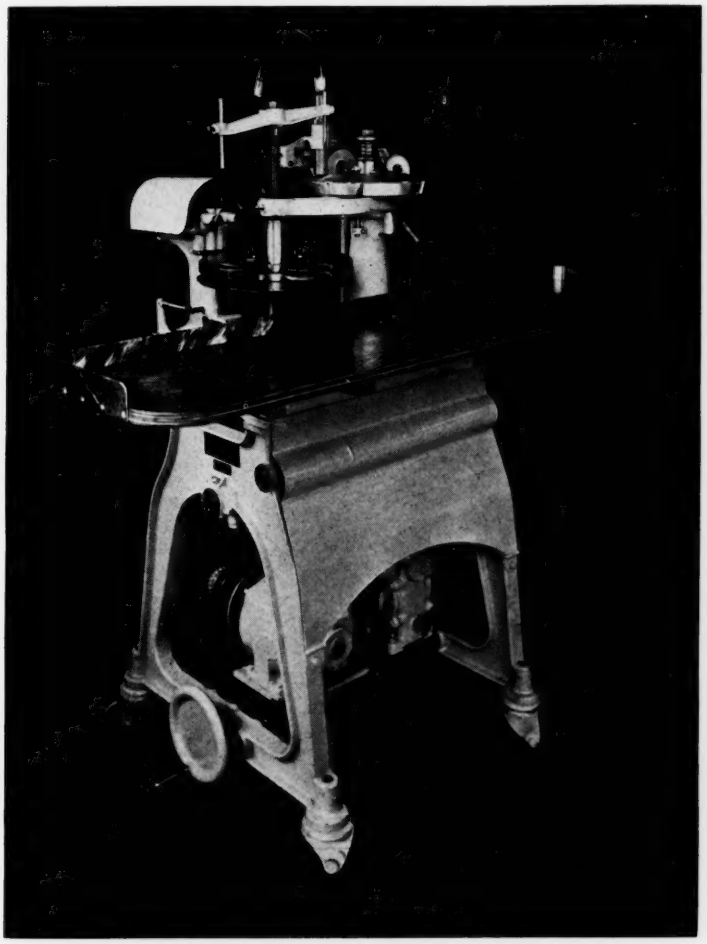
MECHANICAL TABLET BOTTLE COTTONING

A PROVEN DEVELOPMENT IN TABLET PACKAGING

MARKED ECONOMY IN COTTON AND LABOR ➡

COTTON UNTOUCHED BY HAND ➡

CONTROL OF COTTON FOR EASE OF EXTRACTION ➡



COMPLETE TABLET RESTRAINING IN ANY STYLE OF SHOULDER, ROUND OR SQUARE BOTTLE ⬅

IMPROVED APPEARANCE OF FINISHED PACKAGE ⬅

NUMEROUS SUCCESSFUL INSTALLATIONS ⬅

Illustration showing standard semi-automatic machine, readily adjustable for bottle size. Other types available for speeds up to 180 bottles per minute.

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A LAKSO machine was instrumental in the Norwich Pharmacal Company's winning *first award* on its equipment lineup in the 1938 All-America Package Competition.

THE LAKSO COMPANY

SPECIAL PRODUCTION EQUIPMENT

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Carton Loading and Closing Equipment

by CHARLES L. BARR*

The term "cartoning machinery," as used in this article, refers to machines designed to open or erect cartons, to place therein one or more units of the product itself, or a bottle, jar, tube or other package unit or units, plus supplementary printed matter, if desired, and to then close the carton into the form in which it will appear when placed on the dealer's shelf.

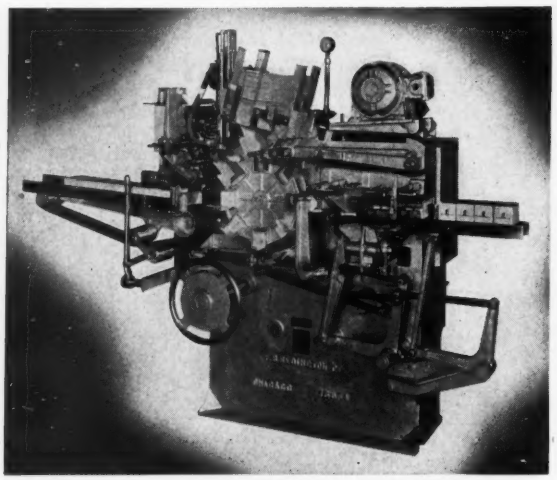
Whether or not a prospective purchaser of cartoning machines or a producer of cartoned products is warranted in planning for the use of cartoning machinery, depends upon a number of factors. First, of course, there is the matter of the number of packages he is required to produce daily or weekly. Secondly, there is the nature of his package. Some cartoned products can be packaged quite economically by hand. Others, because of their more involved nature, are prohibitively expensive to produce by hand. The best procedure involves the submission of packages to carton machinery suppliers who can, after a study of all the factors involved, recommend either an existing machine in their lines or advise as to the possibility of modifying one of these machines.

In general, there are two types of cartons that are handled by automatic cartoning machinery. Most commonly used is the tucked carton equipped with top and bottom flaps which are tucked into position by the fingers of the cartoning machine. The other type is what is known as the glue end carton. This is used in cases where tamper-proof seal is desired or where the weight of the product would open the bottom tucks of the tucked type. In some instances, cartons are used with a combination of glued flaps at the bottom and tucks at the top.

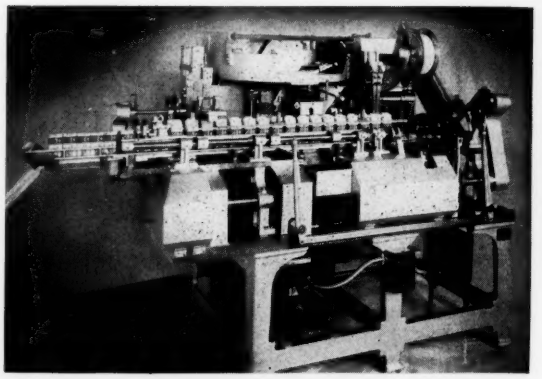
The variety of cartoned products is tremendously broad. Packages of razor blades stand, perhaps, at the small end of the size scale. From this point they range upwards to the large cartons used for macaroni or for cleansing tissues.

The efficient speeds at which cartoning machines now operate depend to a great extent on the nature of the product to be handled and the size of the package. Several well-known five-cent packages of candy coated chewing gum, containing twelve tablets, are automatically produced on machines that operate at speeds of 100 to 160 packages per minute. Safety razor blades are automatically counted out and cartoned at speeds as high as 240 packages per minute. Bars of soap and similar products are automatically cartoned at speeds of 150 or sometimes more per minute. Tubes of tooth paste and shaving cream, small bottles and the like, are handled at 150 per minute regularly.

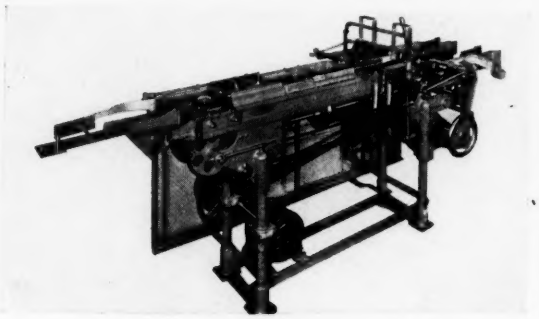
* Vice-President, F. B. Redington Co.



1. Machine places oleomargarine prints, plus insert material, into cartons at speeds up to 100 per minute. Photo courtesy of the F. B. Redington Co.

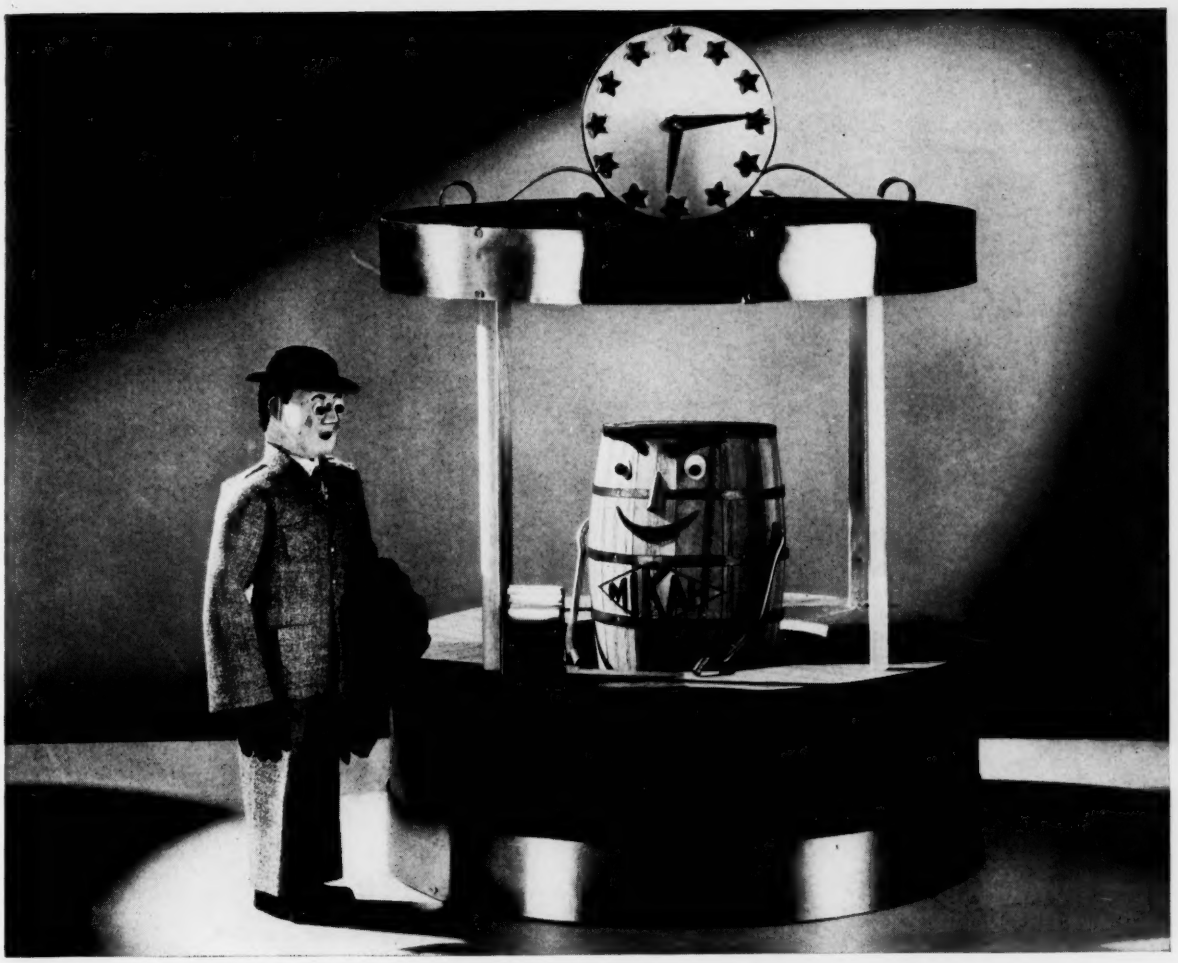


2. Cartoner for cough drops which erects carton, closes bottom tucks, feeds and inserts liner, fills package and folds and closes bag and carton. Speed 70 per minute. Courtesy U. S. Automatic Box Machinery Co., Inc.



3. Carton folding and closing machine taking filled cartons off conveyor line. Courtesy Peters Machinery Co.

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Collapsible Tube Filling

by F. J. STOKES Jr.*

The selection of tube filling equipment depends on three important factors: first, the consistency of the material; second, the range of tube sizes; third, daily production.

Liquids and semi-liquids that are self leveling and will flow by gravity are the least difficult to handle as the material will run into the tube from the top, will fill uniformly and will be free of air bubbles. Furthermore, the material can be easily fed to the hopper of the machine and will flow down through the hopper, by gravity into the filling mechanism. Tooth pastes, shaving creams and similar materials that will not flow by gravity, must be filled by placing the filling nozzle down into the bottom of the tube and filling from the bottom up to prevent air pockets. In most cases, the filling pump will pull the material down into the hopper, but if the material is "short" and breaks apart, an impeller type agitator must be used to force it down through the hopper. Creams, ointments and similar pastes that will not flow by gravity can sometimes be made to flow by warming them. The machine, in this case, is equipped with a jacketed hopper and an agitator to keep the material at a uniform temperature and it is also equipped with heated filling parts. Before adopting this method, it is important to determine whether the material shrinks on cooling, as any shrinkage will draw the walls of the tube in and give it an empty appearance.

The majority of the machines on the market will handle tubes up to $1\frac{1}{2}$ in. in diameter by 6 in. long and many of them will handle tubes up to $1\frac{1}{2}$ in. in diameter by 7 in. long. Hand-operated equipment will handle somewhat larger tubes, but the semi-automatic and automatic machines must be modified to handle tubes over 7 in. in length.

The production requirements will, of course, determine whether hand-operated, semi-automatic or full automatic machines should be used. All three types are available and range in capacity from 100 or less tubes per hour, up to 7000 an hour.

Machine Types

A complete outfit for filling, closing and clipping collapsible tubes may be purchased for as little as $275 and will put up from 10 to 20 tubes per minute, using three operators. Two types of hand-operated filling machines are available, one for liquids and semi-liquids and the other for pastes. Both are easily adjustable and both fill the tubes as accurately and as cleanly as do power-driven, automatic equipment. The filled tubes are then transferred to a small hand-operated folding machine which applies a double fold or which can be furnished to apply the quadruple fold. A third operator indents the folds such as on clipless closures, or clamps on a clip, by means of a foot-operated press. Certain models can be equipped with electrically heated jaws for applying the hermetic seal described below.

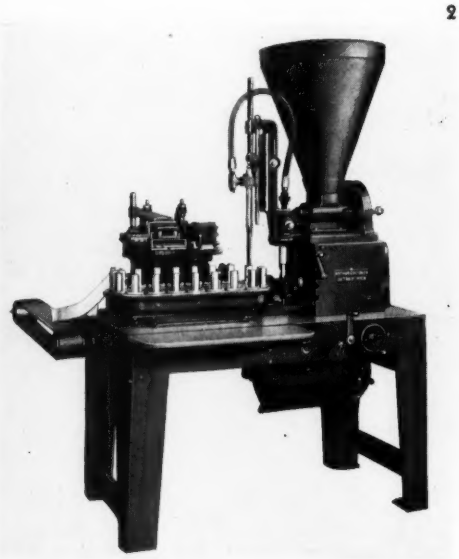
A production of about 30 filled and sealed tubes per minute can be had by using a general purpose filling machine and then transferring the tubes to a second machine which folds the ends and seals them. Two operators are

* F. J. Stokes Machine Co.

1



2



1. Machine for handling liquids, ointments or pastes at a rate of 25 tubes per minute. One operator. Courtesy F. J. Stokes Machine Co. **2.** Automatic filling for tooth pastes, shaving creams, etc. Fills, closes and crimps. Courtesy Arthur Colton Co.

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The first practical establishment for the commercial manufacture of vegetable glues and pastes was the factory of The Arabol Manufacturing Company erected in 1885.

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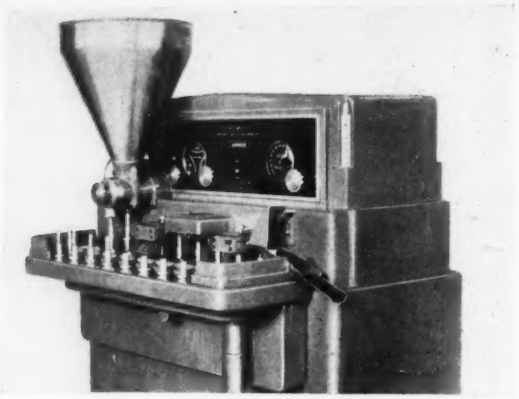
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3. Filler equipped to provide new weld type closure. Courtesy The Karl Kiefer Machine Co.

needed. In the case of liquids, it is possible to put a filling attachment directly onto the folding and sealing machine, in which case one operator can fill, fold and seal up to 30 tubes per minute. These machines can be equipped with variable speed drive, so that the speed of the machine can be adjusted for individual jobs.

For the manufacturer who has a varied line of products, a completely automatic tube filling, closing and sealing machine is available which will handle up to 50 tubes per minute with one operator. This machine will handle both pastes and liquids, since the tubes are raised up over the filling nozzle and are filled from the bottom up. The machine can be set to make a plain double fold, a quadruple clipless fold or the hermetic seal. The operator simply places the tubes into the tube cup and registers them so that the trade mark or printed matter on the tube will be in proper relation to the fold. Ejection is automatic onto a conveyor.

A full automatic machine is available for filling up to 120 tubes per minute. This machine automatically removes the tubes from the cellular shipping carton, registers the printed matter by means of a photo-electric cell, automatically fills, closes and discharges.

Bottom Closure

The simplest type of closure is a plain double fold. This is neat and attractive in appearance and is sufficiently strong for materials, such as rubber cement and glues, that automatically harden and prevent further seepage in the event they leak through the fold. It is also satisfactory for thin pastes and similar materials that are easily extruded and do not strain the fold when forced out of the top of the tube. This double fold can be strengthened considerably by indenting the metal.

The so-called clipless closure consists of a quadruple fold, reinforced by corrugations. The ten layers of metal that result are as strong as a clip and considerably more resistant to seepage and leaks.

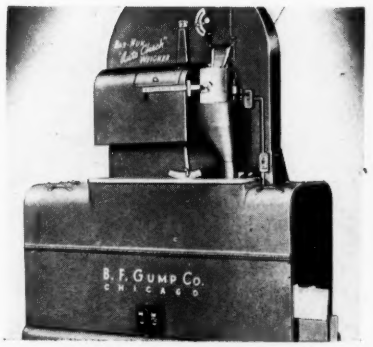
When the tube is folded, the walls come together and give the tube a wedge-like appearance. The volume of the tube is reduced considerably and the material is forced up toward the fold. For this reason, tubes must not be filled more than about $^3/_4$ or $^7/_8$ full.

The ordinary double and even quadruple fold is reasonably tight, but many materials quickly seep through and either corrode the tube or give it a very unattractive appearance. Many methods have been devised to seal the tube absolutely tight, with varying degrees of success. One method is the hermetically cemented closure. The tubes are coated, on the end where the fold is made by the tube manufacturer, with a special transparent cement. The tubes are filled and folded in the usual manner on regular equipment, but the crimping jaws are electrically heated and when the fold is corrugated by them, the heat fuses the cement and produces a tight seal.

Another tube sealing method, available on a patented machine of one manufacturer, uses a welding process to seal the tube walls together. This, it is claimed, permits a saving of up to three-quarters of an inch of material on each tube.

Bag Filling and Sealing

Automatic equipment for the efficient closing of stiff containers such as has been available for many years, formerly made it almost imperative for the large producer of packaged goods to seek some form of stiff container, either a can or carton. Although the cost of these containers was considerably higher than that of paper bags, the saving in production cost frequently more than equalized the excess cost of the package itself. Thus, in most cases, the bag remained the unit for only the small producer who utilized all hand operations or combined hand or semi-mechanized bag opening and sealing operations with semi-mechanized or automatic filling operations.



1. Automatic bag feeder, opener and weigher. Speed 30 bags per minute. Courtesy B. F. Gump Co.

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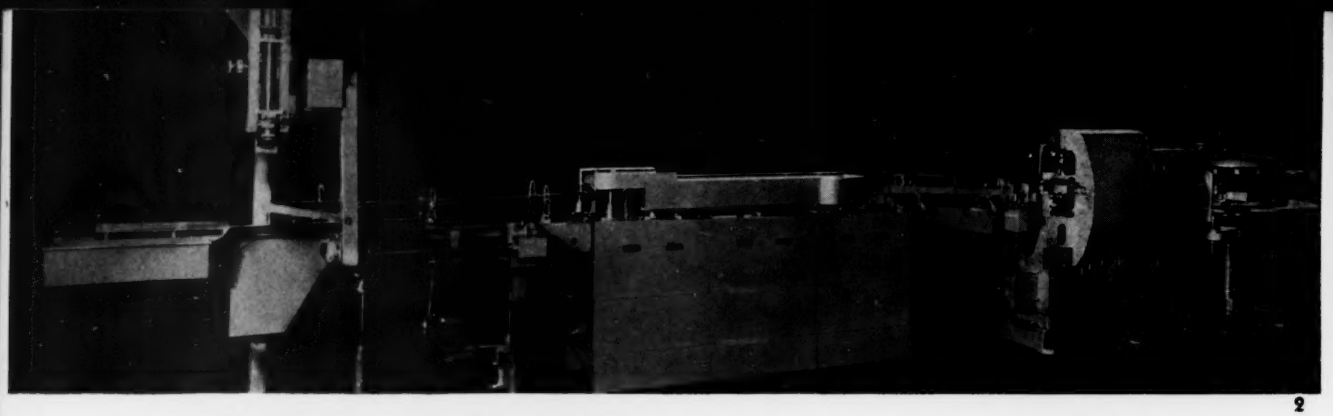
Our modern plant . . . our Research Laboratory . . . our facilities for large-scale production are your guarantees that whatever your adhesive problem may be, we have its solution.

MANHATTAN PASTE & GLUE COMPANY INC.

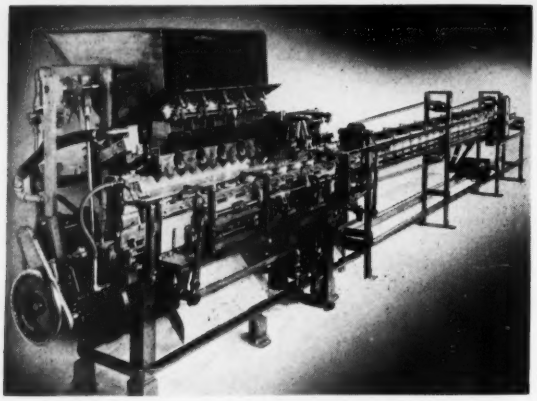
Lion Brand Adhesives

LION BRAND ADHESIVES
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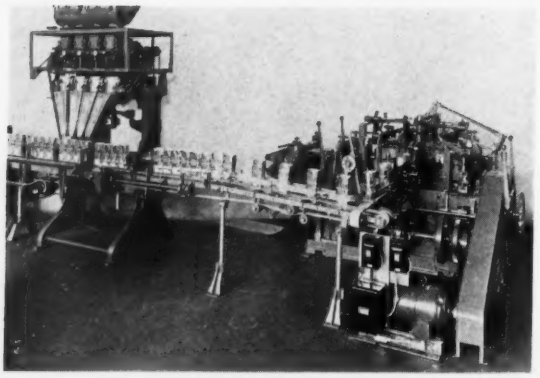
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2



3



4

2. Automatic weigher and bag opener in line with automatic setting machine and automatic closing and sealing machine, extensively used for sugar and similar products. Courtesy Consolidated Packaging Machinery Corp. **3.** Automatic bag feeding, bulk filling and bag folding and gluing machine. Speed 40 per minute. Courtesy U. S. Automatic Box Machinery Co., Inc. **4.** Special bag making machine feeding to four-scale net weigher. Courtesy Pneumatic Scale Corp., Ltd.

Today the automatic machinery available in this field is capable of performing one or all of the operations included in the following list: bag feeding, bag forming, bag opening, bag filling, check-weighing, bag closing and bag sealing. Developed in almost every case to meet the specialized needs of a single producer or a single industry, these machines have come to form a group in themselves. Since differing machines perform differing groups of operations, no single description will cover the entire field. A perusal of the photographs and captions which illustrate this article will, however, give the reader a pretty fair idea of the possibilities inherent in such machines.

The introduction of automatic bag packaging machinery has, in some industries, resulted in a surprising change in the appearance of the bag itself since the automatic machine is capable of producing a bag closely approaching in appearance the neatness and attractiveness of the finest stiff containers. With this possibility, bag suppliers and bag users have turned from the cruder forms of bag decoration to the use of the finest forms of printing and of the more attractive outer bag materials.

Box and Bag Stapling Equipment

by F. I. BROWN*

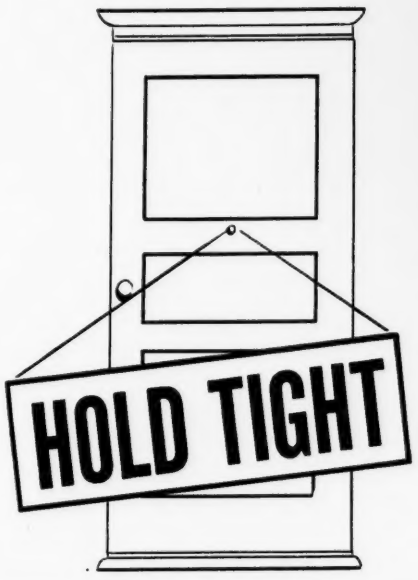
The use of stapling, as a means of closure for bags and boxes, has shown a great development during the past few years, furthered by the wide variety of stapling equipment that has been produced to meet specific requirements. Bag sealing with staples has grown from a spare time job of retail clerks until whole departments are now devoted to this particular operation. Whereas hand-operated machines were used, and still are, power-driven staplers and stitchers are effecting great savings in the packing and shipping departments themselves. One coffee roaster who adopted this method of sealing saved $276 on a single order of bags and $20 per month on equipment upkeep. He also saved 23 per cent of his packing costs and 18 per cent of packing time.

Among the advantages of stapling as a method of closure is the fact that it is neat, secure, and very fast. It does not impair the appearance of the container and the container may be used immediately, without waiting for an adhesive to set. Dampness does not cause the seal to

* Sales Manager, Bostitch, Inc.

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That's the motto inscribed on the doors of the Union Paste research laboratory. You'll agree it's a very good slogan and a philosophy.

For from the test tubes and minds of the specialized chemists working here for the past twenty years have come thousands of new and improved formulas for better Adhesives that have solved innumerable headaches.

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UNION PASTE CO.

200 BOSTON AVENUE MEDFORD, MASS.



1. Electro-magnetic stapler used for bag stapling. Photos courtesy Bostitch, Inc.



2. Foot treadle-operated stapler or sealing coffee shipping bags.



3. Motor powered, treadle controlled stapler for large bags.

loosen, with the danger of the contents spilling out and it is practically impossible to remove the staple and again seal the package without detection, thus reducing the danger of pilferage to a minimum.

Four types of closure are generally used in this bag sealing work. The simplest form is where the bag is merely folded over at the top and fastened with one or two staples. Another method is the use of a cardboard bag top which folds over the top of the bag and is stapled through the bag, thus making a seal and furnishing a label at the same time. Where the bag is to be folded tightly over the contents, as in the case of a coffee bag, sometimes the two sides are folded in first and then the back and front folds lapped over each other and stapled with a single staple. When a non-sift seal is desired, a wide fold is made across the top of the bag and this fold is folded again, the sides being folded under at the same time. By inserting a stapling machine under the two ends of this fold successively and driving a staple in each end, a flat top, non-sift bag is produced.

Packers of asphalt, fertilizer, and other heavy bulk products, who use multi-wall paper bags, have discovered that stapling is an efficient and economical means of sealing these bags, too, and bags up to 100 pounds capacity are handled easily and quickly on equipment especially designed for this purpose.

A very recent development in packaging is the heavy kraft shipping bag, which is used as a shipping container for coffee and other items, carrying 12 or 24 1-lb. bags. This container is especially adapted to motor transportation and is widely used by packers operating their own fleet of trucks. When filled, the sides of these bags are folded in and the back and front are then folded over each other and stapled with a hand-operated or foot-operated machine, depending upon the preference and needs of the packager.

Users of corrugated containers have widely adopted stapling methods. Foot- or motor-operated bottom staplers and stitchers are used to seal the bottom flaps, while specially designed top staplers and stitchers are used on the tops. Some of these top staplers make use of a sealing blade which is inserted under the flap and a more modern development is a top sealing stapler which is operated from the outside of the closed container, closing its staple entirely from the outside and requiring the insertion of no sealing blade.

The smallest machines used for bag stapling can be operated in the palm of the hand. There are heavy duty hand models of larger size, as well as a wide range of foot- and motor-driven machines all the way up to large automatic box stitchers. Complete information is available in the industry and it is an easy matter for the user to obtain the equipment that is exactly suited to the requirements of his particular work.

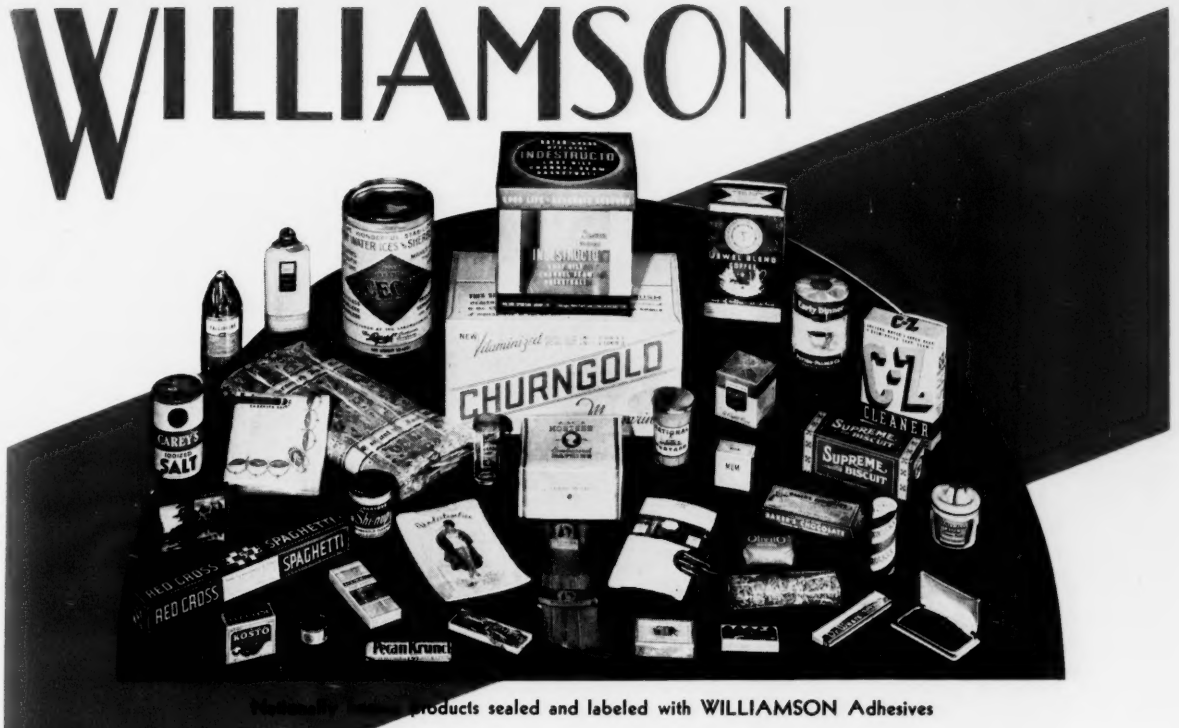
One of the widest uses of stapling in recent years has been in carding for display. Items of merchandise that are too small to possess sufficient attention power or to carry adequate sales information are stapled to cards which present the message to the consumer. Such cards serve to identify the brand and the manufacturer, to convey a selling message that the article itself is too small to carry and the salesperson too busy to tell, to carry directions and explanations that insure the proper use and care of the product, to advertise other items made by the same manufacturer, and to discourage pilferage, in the retail stores, from counter displays.

Practically any item that can be embraced by a staple can be carded in this way. Bottles or other fragile merchandise can be safely and quickly handled, because the pressure of the stapling machine can be accurately controlled without variation and the staple can be firmly clinched with no appreciable pressure whatever on the object being enclosed.

Speed is a big factor in stapling. Whether operated by hand, foot, or electric motor, the stapling machine clicks out the staples as fast as the operator can handle the work. Every click completes a stapling operation. It is much faster for most kinds of bagging and carding than tacking, riveting, gluing, hinging, sewing, hooking, and taping operations—operations which involve

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Nationally famous products sealed and labeled with WILLIAMSON Adhesives

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WILLIAMSON offers a full line of standard adhesives for packaging operations: Plain and Moistureproof Cellulose Adhesives . . . Wax Paper Glue ...Case Sealing Glue...Carton Sealing Glue . . . Varnished Paper Adhesive . . . Bottle Labeling Gum . . . Pick-up Gum and Lap Label Paste . . . Remoistening Gum . . . Waterproof Liquid Adhesives and Pastes for sealing and labeling operations.

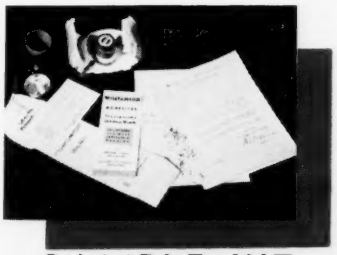
For solving special problems, an "Experience File" is maintained with detailed data on hundreds of different operations, including samples of materials glued. Complete laboratory service is available to you for solving problemsand developing special adhesives.

The superior machine operating characteristics found in WILLIAMSON Adhesives are due to uniform quality developed in manufacture. Carefully selected raw materials, which come from all parts of the world, are chosen by experience and service tests to meet exacting standards. Our adhesives are made under automatic temperature control . . . tested for viscosity by a direct-reading electric viscosimeter . . . then pumped through a mechanical filter and stored for shipment in wax-lined containers.

The result is a smooth, uniform product, capable of giving maximum production on high-speed automatic machines.



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4. Deep arm foot power stapler for assembling carton bottoms. Photo courtesy of the Acme Staple Co.

materials of all kinds. There is no waiting for an adhesive to set, and the staple will hold regardless of temperature or moisture. Furthermore, stapling machines are portable and can be placed wherever most convenient for the work in hand. For example, in retail stores, where pre-packaging is to be done by clerks in odd moments, hand-operated machines are used on each counter where the work is handled. Manufacturers and distributors can better concentrate their work and more often use foot- or motor-driven machines for both packaging and display. In the field, where fruits and vegetables have to be packaged as picked, stapling machines are used advantageously.

The automatic-feed staple-hammer is also widely employed in packaging and shipping operations. Driving a staple like a double-pointed tack, with each single blow, this hammer is an efficient time-saver in covering crates, in lining boxes, cars, and boats, and in tacking cards and labels on boxes, crates, and barrels. Requiring but one hand for operation, it leaves the other hand free for handling the material that is being tacked.

On large production, wire stitchers instead of staplers are often used. A stitcher, in the parlance of the industry, is a machine which makes its own staples from a coil or spool of wire. Each operation of the stitcher-head drives a staple and forms another one, ready for the next stroke. In staplers, on the other hand, the staples are pre-formed and are fed into the stapling machine in strips held together by an adhesive. Each type of machine has its advantages for particular kinds of work and a qualified manufacturer's representative can quickly determine what machine is best adapted for the job.

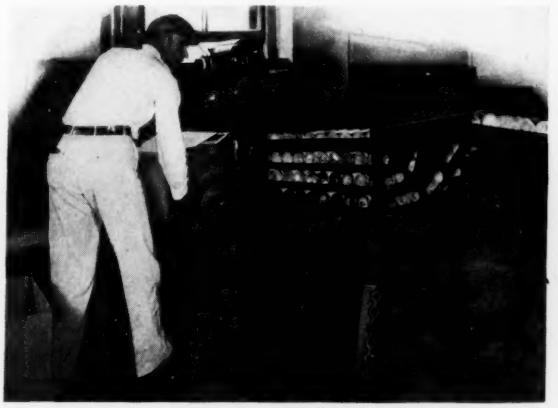
Case Packing and Sealing Machinery

The increasingly broad utilization of corrugated and solid fibre shipping containers, by packagers of every variety of product, has brought in its train the development of semi-automatic and automatic machines which open, pack, seal and code mark such containers, at high rates of speed and with remarkable efficiency. Whether any given plant will mechanize all, or only some, of these operations will naturally depend upon the nature of the product packed, the volume of production and other considerations of a specialized type.

Case packing equipment for can packing consists essentially of a series of inclined runways which receive and gather cans as they roll off the conveyor lines, until the proper number of cans have been assembled to fill one layer in the shipping container. The cans are then pushed, horizontally, into the container by a hand or electrically operated device. If the container is of a type to accept more than one layer of cans, this operation is repeated a sufficient number of times to fill the waiting shipping container.

Bottle casing units work on a similar principle, but use a vertical drop, rather than a horizontal push, to effect entry of the packages into the shipping container. Bottles come off the conveyor lines and are gathered over a grid which correctly positions them. At the proper moment, and under the control of the operator, the bottles drop into the shipping container which has been automatically raised until it rests just under the grid. The shipping container is then lowered back to the conveyor line and the operation repeated with a new empty shipping container.

Carton packers have also been developed, working on principles very similar to those of the can packer with the exception that the rolling action of the can is re-

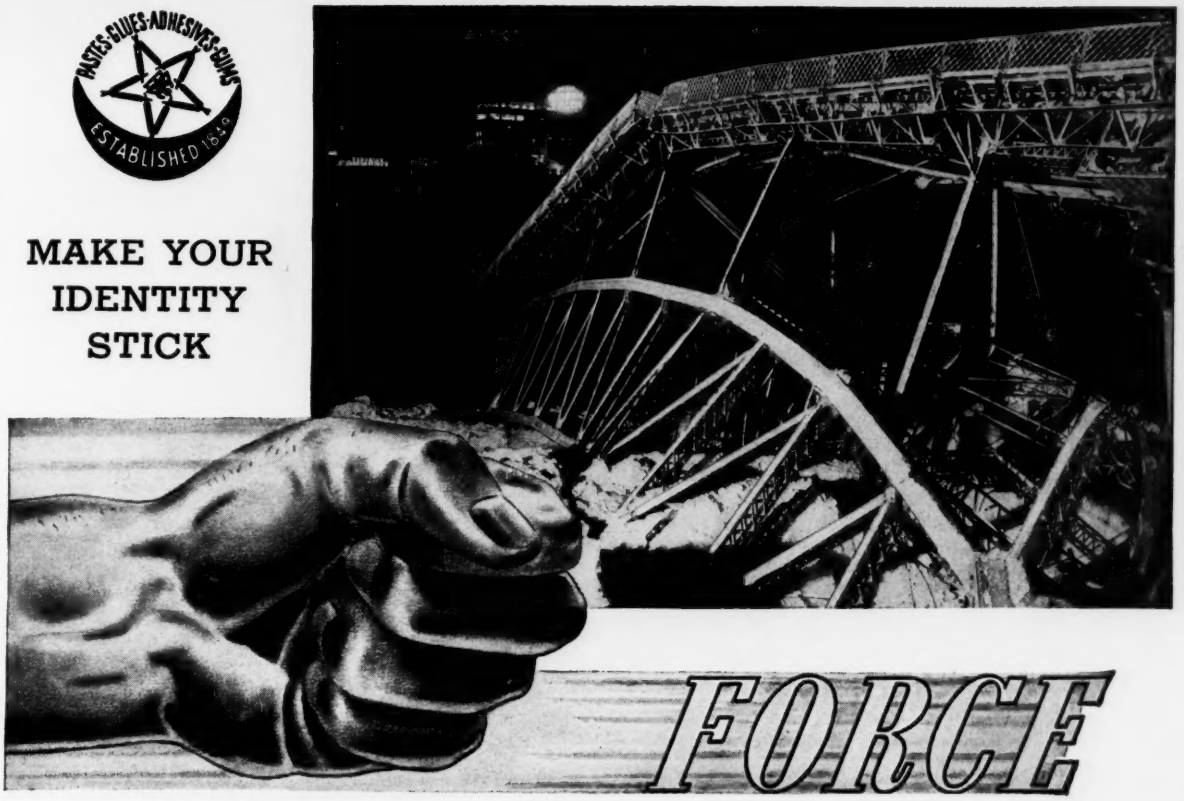


1. Motor driven case loading machine for can packing. Photo courtesy Burt Machine Co.

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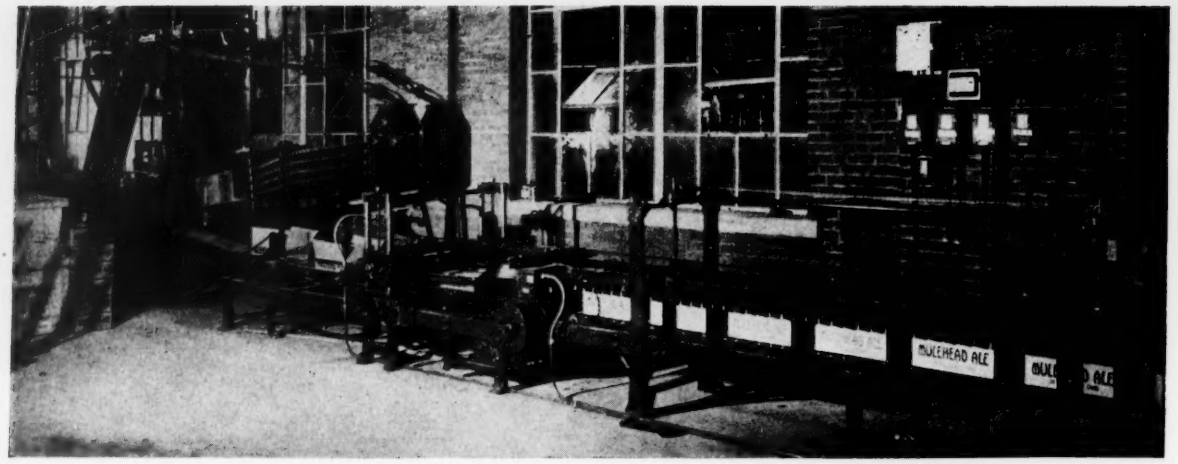
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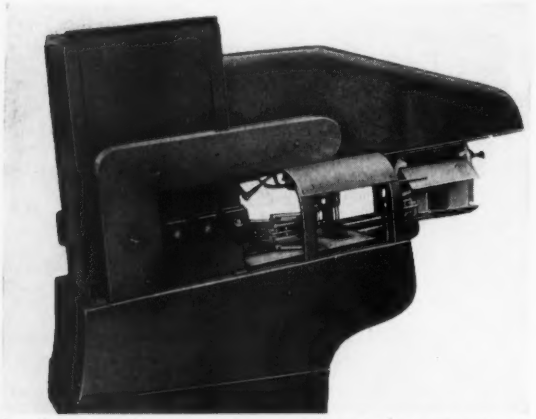
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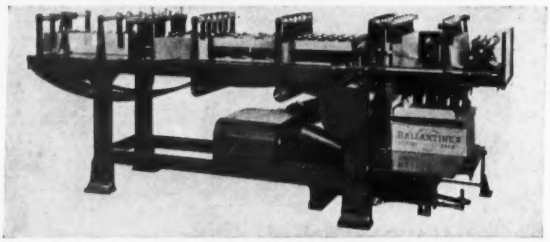
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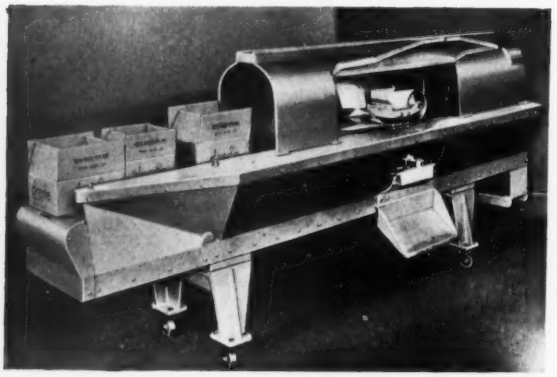
2. Packer and sealer handling beer cans and cases. Photo courtesy Standard-Knapp Corp.



3. Automatic shipping case opener and erecter for use in conjunction with automatic casing machine. Photo courtesy J. L. Ferguson Co.



4. Machine for case loading of beer bottles. Photo courtesy Standard-Knapp Corp.



5. Sealer for gluing different sizes of container without manual adjustment. Photo courtesy J. L. Ferguson Co.

placed by a pushing action to get the various rectangular cartons into position before placing them, en masse, into the case. In many plants, of course, case packers are not utilized, either because of limited production, frequent size changeovers, or a desire to combine hand packing of cases with an inspection operation. The use of packing machines has, however, increased to a remarkable degree during the past few years, particularly in the canning and, more recently, in the brewing industries.

Once the cans have been packed—by hand or by machine—it becomes necessary to firmly seal them for shipment. The simplest devices for this purpose are the hand glue sealers, which are simply adjustable pressure units mounted on top of roller conveyor sections through which the hand glued cases are passed. Pressure is exerted upon the case flaps until the glue has properly set.

Case gluing and sealing units of an automatic type receive filled, but unglued, cases directly from the conveyor line and apply adhesives to both the top and bottom flaps of the cartons with the goods already packed therein. They then fold the flaps into closed position and pass the sealed containers through a compression unit, where the glue sets. Speeds of from 200 to 1200 cases per hour are practical on such automatic equipment. Such machines may be equipped to seal and glue top flaps only, as in the case of shipping containers for bottled goods which have previously been used to carry the bottles from the glass plant to the packaging plant and thus have already had their bottoms pre-sealed.

The machines are completely automatic, require no operators and are adjusted to start in motion whenever a case is presented to the machine by the conveyor line. Such machines are adjustable for various sizes of corrugated or fibre shipping cases.

Combination case packaging and sealing machines have been developed which automatically remove knocked-down containers from a magazine, open and fill them with packages and seal all flaps.

Code marking and serial numbering devices have been developed for use in conjunction with case packing machines, to identify contents and date packed, or to provide any other desired data.

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Selection and Specification of Adhesives

by GERARD B. CLORAN*

Packaging adhesives are materials derived chiefly from vegetable products which, when applied to any surface in an unbroken film, have the ability—upon setting or drying—to bond it to other surfaces.

Latex adhesives illustrate materials that complete their bonding action upon setting. As a rule they do not penetrate but do remain permanently plastic. They achieve adhesion mainly by displacing sufficient air between surfaces to form a suction. The high tensile strength of their durable films insures a strong bond. Materials of this type are, therefore, required for many combinations involving non-porous surfaces.

Dextrine glues typify materials that complete their bonding action after penetrating and upon drying. They achieve adhesion principally by biting into and dovetailing the formation of surfaces. They dry either by the absorption or evaporation of their solvents (usually water) and, therefore, suggest themselves wherever penetrable surfaces are involved.

Occasionally a combination of both principles in modified form is utilized—particularly where one porous and one non-porous surface are to be adhered. Gelatinous, (jelly type) gums exemplify materials in this category, for while they provide enough penetration to anchor securely on the porous surface, they either do not dry completely or dry to a semi-plastic film so as to provide suction adhesion where penetration is impossible.

Since the majority of commercial uses require adhesives that penetrate and since the success of such adhesives depends upon a *control* of penetration, we will discuss those factors which the adhesive user may regulate and which account, to a considerable extent, for the success or failure of many gluing operations.

Factory Considerations

Dilution: If adhesives are thinned beyond the limitations outlined by the supplier, the glue solids will be carried too deeply into the stock, leaving an inadequate coating on the surface to provide a proper bond. In other words, excessive dilution will destroy the *film continuity* essential to adhesion. On the other hand, an inadequate dilution may prevent the degree of penetration necessary for secure anchorage. Therefore, dilutions must be accurate.

Application: If a thick film of glue is applied, the speed with which the adhesive sets will be retarded and, accordingly, more time for deep penetration provided. Since excessive penetration is to be avoided—always apply a thin, even film.

Glue Temperature: If adhesives are chilled by exposure to low temperatures, they assume an artificially heavy body which generally induces the user to add more than the specified amount of water or other diluent. Therefore, all adhesives should be brought to normal room temperature before they are thinned. Since heat will reduce the viscosity of a liquid glue, a slightly lesser dilution should be used in summer than in winter. Carrying this thought further, it is possible, by heating glue, to attain a proper working consistency without dilution or with a reduced dilution and thereby increase the setting and drying speeds. This is sometimes desirable where extremely short compression is provided or where it is necessary to limit penetration into very absorbent surfaces.

Contact: One of the essentials of adhesion is proper contact, so that sufficient pressure to insure an even meeting of the surfaces is necessary. When sealing rough surfaces, greater pressure should be used than when sealing smooth surfaces. However, excessive pressure either forces the glue solids into porous stocks or the glue film from between non-porous surfaces—thus destroying film continuity and adhesion. The degree of pressure, therefore, depends upon the character of the surfaces involved as well as the nature of the adhesive used. Glues of the cohesive, gelatinous type have more durable filming qualities than dextrine types and consequently withstand higher pressures.

Surface Temperature: If the surface temperature is colder than the glue, the adhesive may chill before a secure anchorage is obtained, and if the surface is warmer, it may decrease the viscosity of the glue sufficiently to encourage excessive penetration. Wherever possible, both the glue and the surfaces to which it is applied should be at normal room temperature when the gluing takes place.

Special Applications

Applying these principles to a few actual packaging problems, the following conclusions may be reached:

For sealing shipping cases, a thin continuous film of a penetrating type adhesive should be used, and sufficient pressure provided to insure a full gluing surface contact. Excessive pressure should be avoided because of the porosity of the surfaces, and both the glue and the containers should be at normal room temperature for proper sealing.

For labeling bottles, a combination of suction and penetrating qualities would be desirable, for in this operation we have to contend with one non-porous surface (the glass), which suggests a cohesive product, and one

* National Adhesives Div., National Starch Products Inc.

porous surface (the label), which suggests a penetrating type adhesive. This combination is characteristic of the bottle labeling gums most generally used. As in all cases, a thin film will provide the best results.

For seaming metallic foil, where two non-porous surfaces are involved, neither of which offers any real opportunity for absorption or evaporation of glue solvents, a plastic type of adhesive with high suction is required, and moderate or light pressure should be applied so as not to destroy the continuity of the film.

From these conclusions, the science underlying the selection and handling of adhesives and the many factors which must be taken into account in controlling penetration can be appreciated. Adhesive manufacturers maintain technical service departments to aid in the solution of packagers' problems and to develop the special formulae which meet these problems and cope with the requirements of faster machines and special stocks.

Folding Boxmaking Machinery

by ROGER C. DICKEY*

The designation, folding carton or folded-paper box, refers to a package of any size, shape, or style, made from one piece of folding box-board which has been cut and creased in such a manner as to form a complete container with folding flaps at both ends.

After the blank has been printed, cut, and creased, it is ready to be glued and folded on either hand-gluers or automatic gluing-equipment. Wherever high production at low cost is paramount, automatic gluers will be found to be universally used. Modern high-speed automatic gluing-machines are capable of folding and gluing boxes at speeds up to 100,000 per hour, depending upon the size and shape of the blank.

Present-day gluing-machines are equipped with several types of feeding devices so that the most efficient feed can be employed for handling the various sizes and qualities of board being run. The feed of a gluing-machine is very important because it determines to a large extent the quantity of work it is possible to run.

After the blanks are fed from a pile, one by one, into the gluing-machine, they are gripped by carrying-belts which carry the blanks over a glue-wheel which revolves in a glue-pot. To assure a thin, continuous, unvarying film of adhesive on the glue-wheel at all times, it is customary to employ a scraper mechanism. After the glue is applied, the folder-belts begin the action of folding the right-hand panel and the left-hand panel, with the glue-lap attached. The left-hand panel is folded down first, and the right-hand panel is folded so that the outer edge comes over the glue-lap. When the blank leaves the fold mechanism it passes between breaker-rolls, which exert pressure over the folded crease-lines and prevents the blank from popping open. The blanks are then counted, and as a general rule every fiftieth carton is thrown slightly out of the line of travel so that the stacker-attendant can gather them in predetermined lots.

It is possible to secure cams, which are mounted on the counter, to change the count. High-speed electric counters and mechanical counters are used on folding-box gluing-equipment. After the blanks are counted, they pass from the stacker delivery into the stacker-compression section, which moves at a very slow rate of speed. The blanks are accumulated and passed between a lower stacker-apron and an upper stacker compression-belt which allows the glue in the glue-joint to set. The cartons then emerge, and on some machines it is possible to turn them on edge and automatically jog them. All the delivery-attendant has to do is to pick up the previously-counted cartons in unit lots and either place them in a tying-machine or in the container in which they are to be shipped.

Recently an attachment has been developed for use in conjunction with a standard gluer, so that outwardly collapsible or diagonally folded boxes and spot glued or web corner boxes can be handled at high rates of speed. This attachment is mounted on caster rollers and is latched into position at the front end of the standard gluer.

There has also been a demand on the part of the box manufacturers for combination box making machines capable of performing a number of different operations. To meet this demand, a new all-purpose machine has been developed for performing six different classes of work: 1. Regular folding boxes; 2. Prefolded folding boxes; 3. Single or double folded double wall boxes; 4. Prefolded double wall boxes; 5. Spot glued boxes; 6. Diagonal folded or outwardly collapsible boxes.

There are several machines on the market for automatically applying windows to previously apertured carton blanks. The blank is fed into the machine by a top combing feed and is contacted and advanced by traveling timed chain pins past the glue applying mechanisms, where adhesive is applied in proper location around the edge of the aperture in the blank. Then the blank continues its travel to the window applying mechanism, where the proper length of cellulosic material is severed from a roll or web and placed on the blank in proper register. Each sheet of window material is cut to uni-

* The International Paper Box Machine Co.

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form length and transferred to the blank with amazing uniformity and accuracy. The method commonly employed to transfer the severed window material to the blank is by the use of an aluminum drum in which are suction holes. The window is held to the drum by means of suction until it is in position to be transferred to the blank, at which time suction is released. After the window has been applied, the blank is delivered to an accumulator where the finished product is gathered by an attendant. Such equipment is also used for applying transparent liners to frozen foods boxes. Window machines operate at production speeds up to 600 patched carton blanks per minute.

There are two types of automatic machines available for applying paraffin to cartons. One type applies a hot or saturated finish, the other a high gloss finish. Both types of machines can be adjusted to remove the paraffin from the glue lap areas at the same time the blank is paraffined, so that the paraffined blank can be glued and folded at high rates of speed on automatic folding box gluers. The use of such equipment eliminates the necessity of using individual dewaxing machines for removing the paraffin from the glue lap areas. Many of the largest manufacturers producing butter, lard, ice cream and other waxed cartons are using such equipment.

Set-Up Boxmaking Machinery

by C. A. CLAUS *

Set-up paper boxes, aside from "stock boxes," are important factors in packaging, since so many products are more suited, economically and by nature, to the features of the set-up paper box. In this field the development of automatic machinery has provided the means of creating many effects, hitherto unobtainable, save by costly hand labor. This is important to those manufacturers who make products in mass, permitting either mass purchase, or installation of their own equipment for producing their own boxes. The facilities at the disposal of such manufacturers enable them to set up the box-making units required for their mass production, with machine attendance reduced to a minimum.

Set-up boxes in relation to the methods of making the many types and styles may be grouped as follows:

1. Stripped and Top-labeled Boxes: The question of paper wastage prompted a different technique in box-making. Since the bottom of the box is almost never seen, the larger boxes offer a decided saving in cost when made merely by covering the sides of the box, turning over the bottom edge, and turning in the upper. This type of box, used for candy, shoes, rubber goods, shirts, collars, knit-goods, hosiery, etc., can be made on either semi-automatic or fully automatic units. Naturally on large runs of standard size, the economy is appreciable, without really affecting the appearance of the box. For such work, fully automatic machines are available, although for most purposes the semi-automatic units are favored.

The additional feature of applying separate labels for tops and ends, where more than one article is packaged in boxes of the same, or approximately the same, size or shape, is simplified by the use of a newly developed and highly economical unit, operated either separately or "in line" with the stripping machine; fully automatic, or semi-automatic, as desired. This machine glues "all over," is adjusted to use less adhesive, and eliminates all glue seepage, with perfect registration.

2. Wrapped Boxes: This is the method by which many of the ordinary boxes are made. The process, mechanized, still requires a skilled operator, with part time of an attendant to feed and remove the completed boxes. Recent improvements have increased the potential speed of the wrapper, the gumming of the wraps being done by a gluing unit, which conveys the wraps to the operator. There is also an improved unit which takes the wraps from a hopper, applies the adhesive, automatically registers the set-up box on the wrap, and feeds it to the wrapping unit.

3. Blanket or Pinched-top Boxes: These are packages made in box-form, combining paper of two different types or colors, "blanketing" the top with the trade-mark label, and "stripping" the sides. There is a fully automatic unit capable of precision work.

4. Padded-top Boxes: Like domed tops, the padded top is an effect which adds distinction to the package. Mechanical units which handle the paperboard box and equip it with a cotton or paper pad, spotting the pad correctly on the inside portion of the top-label, and applying the complete, padded top to the box, have been standardized, so that a wide range of box sizes can be fitted with merely minor "form" adjustments.

5. Odd-shaped and Multi-cornered Boxes: Fully automatic box- or package-making units, are available for the "hand-made" type of box—those containers with unusual shapes—three, four, five cornered, even six or eight sided.

6. Slide Boxes: Many items are packed in slide boxes, the type comprised by a shell, and the slide which carries the product, and fits snugly into the shell. Machines for making the shells, and for the slides as well, are available. They are essentially speed machines, designed to operate at low cost.

7. Telescope Boxes: This is the type of box wherein the lid fits completely over tray. Methods of making

* Vice-President, New Jersey Machine Corp.

these vary from the semi-automatic type requiring a single attendant, to the fully automatic (see paragraph 2) which takes board and paper from feed rolls. Such units are particularly economical where quantity production is a factor. The box-maker, for instance, can produce first, the tray, and then its telescopic cover, and at other times can produce just trays of the same, or varying sizes, intended for transparent cellulose wraps.

8. Boxes with Necks or Shoulders: Problems in packaging, which can be met with rectangular boxes, may find attractive appearance in the happy solution of production by a unit which makes tops and bottoms of exact size and obtains a snug fit for them by use of a "neck," which is produced on a different unit, inserted after an inside gluer applies adhesive to the boxes as a conveyor feeds them from the box-making machines.

9. Hinged-top Boxes: One of the problems in production is the application of a hinge to packages or boxes so that the container is permanently attached to the top by a paper hinge, either inside or part of a top and bottom label. There is a machine which does this work successfully and economically.

10. Labeling: Rarely is a set-up box complete without applying a label. Recently-designed equipment for this type of work handles either paper or foil labels, of any shape, in a wide range of sizes, gives perfect register, blister-free, and clean work because the adhesive feed is controlled to eliminate glue seepage.

Fibre Can Making Machinery

by W. H. FRICKER*

In the elementary semi-automatic process of making fibre cans, paperboard was first passed through a sheet gluing machine where the adhesive was applied, leaving the uncoated section required for the inside ply. This sheet was laid on a forked rack, thus enabling the adhesive to obtain its proper tack for rapid adhesion.

The sheet stock was then taken to the tube-rolling machine. The uncoated section of the sheet stock was inserted into the lip of a collapsible mandrel on the rolling machine, and the treadle pressed, closing the lip of mandrel and simultaneously starting the mandrel in motion. The tubes were then wound to conform with the mandrel dimensions. The number of ply or wall thickness of tube is determined by the length of the sheet being wound. The tubes or can bodies are usually rolled into lengths approximately 36 in. long. It is the regular practice to sheet these tubes to individual body can heights on the same machine, as this machinery unit is equipped with a cutting bar which holds a series of cutting knives. The location of these knives on the knife-bar severs the long tube into preset lengths.

The reception of the fibre-bodied can by manufacturers and packers alike was so outstanding that fully automatic equipment was designed and built to obtain increased production of the can bodies. The spiral-tube winding machine was developed for taking paper in ribbon form from the roll, winding it over a mandrel to exact diameter requirements and to the wall thickness desired, this wall thickness being determined by the thickness of the ribbon board stock and the number of ply or ribbons being applied.

This means that the paper tube is automatically wound to accurate diameter and of correct wall thickness. An independent saw or cut-off, put in straight line with the winder, severs this traveling spiral-tube body. The saw mechanism travels on a carriage with the tube thereby not retarding travel of tube while in process of cutting. This independent saw cut-off is located at proper distance from the winder to permit tube to dry sufficiently before actual cutting. The next operation is that of recutting this 36 in. length tube into can-body lengths. This is done on a recutting machine where the tube is merely slipped onto a mandrel. The cutting arbor with knives properly located comes into contact with the revolving tube and severs same into pre-determined lengths.

Spiral tube equipment as it is designed and built today has every convenience for obtaining high-class tubing with snug butts or joints, as well as applying high-priced finishing paper to the outside of the tube, which enables the user to manufacture not only plain fibre can products but also high-class cosmetic powder boxes. The spiral tuber as outlined above, with special combination glue and paraffin units, is used extensively in the manufacturing of food containers such as used for packaging ice cream and delicatessen products such as salads, baked beans, etc.

The most modern equipment used in the manufacture of fibre-bodied cans is the automatic convolute winding machine. This winder accepts the paper stock from the roll, applies adhesive, automatically feeds the paper into the lip of the collapsible mandrel, cuts the paper to exact lengths and winds a round, rectangular or irregular shaped tube body from three to six plies. A slitting attachment is built into this machine enabling the slitting of the paper stock in travel so as to allow the obtaining of multiple can bodies within the given range of the machine. The automatic labeling attachment is a feature, which applies lithographed labels to the can bodies at the time of winding, thus producing a finished labeled can body ready for the seaming of tin tops and bottoms. Every operation of this machine is completely automatic.

* General Sales Manager, M. D. Knowlton Co.

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PRINTING

SECTION ELEVEN

Pages 421 to 444

PRINTING INKS FOR PACKAGES

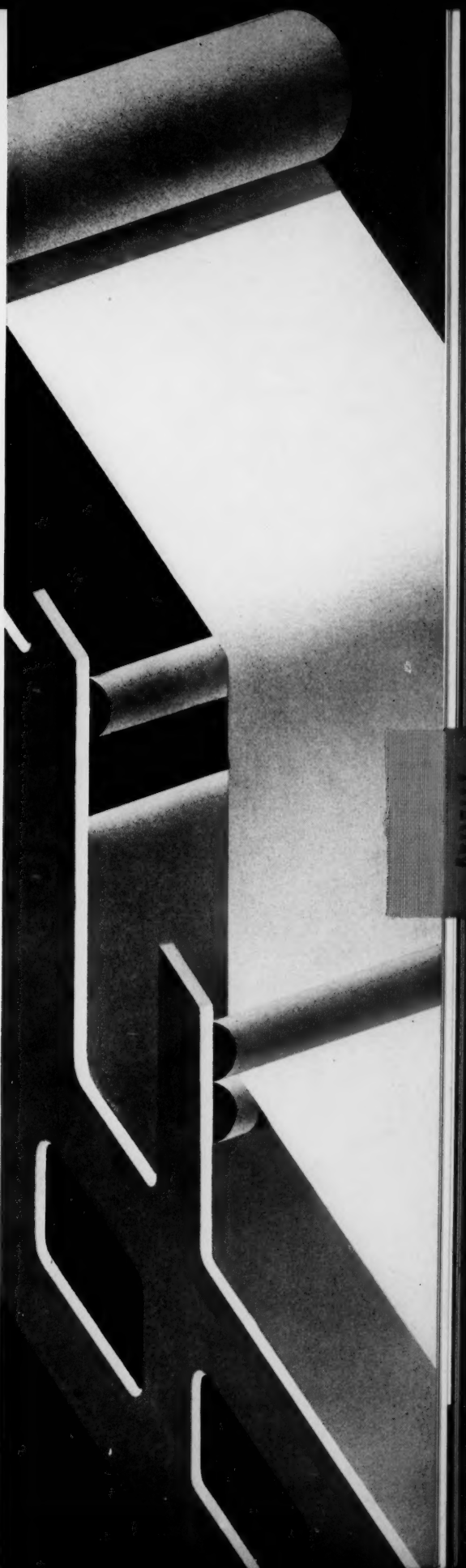
PACKAGE PRINTING MACHINERY

COATING, LAMINATING AND EMBOSSING

ROLL LEAF STAMPING AND EMBOSSING

TRANSPARENT SURFACE COATINGS

VINYL RESINS FOR COATING SURFACES



XUM

Printing Inks for Packages

by DAVID DONOVAN*

Ink usually represents no more than four per cent of the total expense of a printed job, although in package printing this is likely to run somewhat higher. Some package designers hardly give the ink a thought. They just assume that whatever colors they choose can be matched by the printer, and that's that.

In the field of packaging, more than in any other phase of the Graphic Arts, ink is a vital consideration. For in package printing, the ink must often meet unusual specifications. That the ink be the right color is not enough. Obviously, the ink cannot fade, for most packages are exposed to strong light. It must be reaction-proof to whatever a particular package contains. It cannot impart any odor or any color to the package contents. And it must resist rubbing and scratching so that it will *stay* attractive after it is on store shelves.

The manufacturer who accepts a package design with a carefree disregard for the limitations of the inks required, may find himself in grave difficulties. In some colors, there are inks to meet almost any qualifications of fastness or permanence. But, in certain shades, pigments are not available which would be satisfactory for every conceivable package requirement.

Here is a check list of questions which packagers should consider when they describe to the package supplier what type of job they are submitting:

Is the package likely to be exposed to sunlight?
Will it be subjected to heat?
Will it be subjected to water or water vapor?
Will it be handled often?
Is it likely to be scuffed or marred?
Will it need to be proof to perspiration?
Will it need to be proof to special deteriorants, such as soaps, alkalies, acids, alcohol, oils, fats, etc.?

Most of these considerations would occur to any thoughtful container manufacturer, but quite often they are not thought of in terms of printing inks. It must be remembered that when certain colors are specified by the designer, the pigments necessary to create these colors may not be able to fulfill the physical requirements of the job. In any case, it is often necessary to work out special ink formulas to meet the qualities required.

New Permanent Pigments

The chart which follows this article may be helpful as a reference to the characteristics of the pigments commonly used in making inks for packaging. New pigments are being discovered continually which make it easier for packagers to get the colors they want and, at the same time, maintain the necessary permanence. For example, the recent introduction of Syan Blue B (copper phthalocyanine) offers packagers a pigment which is unusually resistant to all deteriorants and which provides blues which compare favorably in an esthetic sense with Peacock and other existing shades of a much more fugitive nature. Syan pigments are now being formulated in greens, as well as in the original blues.

Two other new pigments are Molybdate Orange and Benzedine Yellow. Molybdate Orange is being used in place of the lead chromate pigments (Chrome Orange, etc.) for it shows less darkening under light and its colors are exceptionally strong and clean. Benzedine Yellow is one and a half to two times stronger than Hansa Yellow. It is also more permanent.

Packagers of foodstuffs have special problems to contend with, in addition to the ordinary considerations of ink for containers. Inks used to print packages or wrappers for edible products must, of course, be non-toxic and non-reactive with the product. Ink vehicles (or varnish) made from linseed oil, rosin, perilla, and nearly all of the vegetable drying oils, produce films of negligible toxicity. China wood oil has a slight toxic quality and it is not recommended as the sole vehicle where foodstuffs are concerned. Pigments, on the other hand, range from Paris Green, an arsenic compound of decided toxicity, to such harmless materials as calcium carbonate.

"Hot Melt" Coatings

One of the newest developments is the thermo-plastic, or "hot melt" coating, used to supplant lacquer and spirit varnish coatings and having gloss characteristics reported comparable to those of laminated cellophane. The new materials are melted before being applied; then the melt is picked up by a roller—either a coating machine roller, which uses circulating hot oil, or a heated gravure roller. The roller heats the material to a temperature of 300–350 deg. F. before it goes on the web. A heated leveling bar smooths out the coating, after it has been applied to the web, leaving a glossy, even surface.

With the "hot melts," there is no solvent to lose—all the material goes on the paper. There is no fire danger and no toxic effect on workers. The coating may be applied at higher speeds (200 ft. and more per minute), since the problem of evaporation of the solvents is no longer present.

The gloss achieved with the thermo-plastic coatings is definitely superior to the gloss from a one coat lacquer job. Moisture resistance is excellent. The "hot melts" are extremely resistant to fats, oils, greases, soaps, abrasion and scuffing.

* International Printing Ink Division, Interchemical Corp.

XUM

ZIP-WRAP TO OPEN PULL TO OPEN PULL TO OPEN PULL ZIP-TAPE

Reg. U. S. Pat. Off.

This easy opening tape removes the last consumer objection to "Cellophane". Each time it's used, it invokes a "Thank you" from the consumer. This courteous gesture is building business and good will for many leading manufacturers.

SIMPLE MACHINE APPLICATION

Dobeckmun "Zip-Tape" is exceptionally strong, assuring thoroughly reliable performance always. Mechanically applied through the use of special attachments, the running and material costs are ridiculously low and the merits such as to justify prompt investigation.

ALSO AVAILABLE FOR HANDWRAPPING

"Zip-Tape" is also available for handwrapping, already applied to plain or printed sheets of "Cellophane". These are known as "Zip-Wraps". Added costs are very minor and the appearance and advantages are the same as with the machine applied "Zip-Tape".



New Packaging Ideas

PRIS-O-MATIC BAG

PATENT NO. 2,149,872

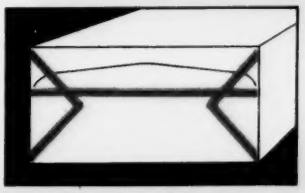


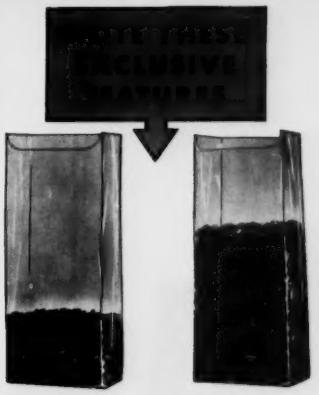
"Pris-O-Matic" Bags. A revolutionary, new, patented construction for "Cellophane" bags which opens up new fields for transparent packaging. Where the need exists, they may be made to hold water. Sift-proof and exceptionally moisture-proof, they give the advantages of "Cellophane" bags to many new products. Fine, hydroscopic products like flour and sugar, epsom salts, prepared cereals, etc., are held in original condition for long periods. Proof against insect infestation. Faster loading since weight of contents forces bag to square shape without joggling. Ideal for "wet packs" used in the quick frozen field.

May be produced with any type of "Cellophane" cellulose film, in single or double wall construction. Note the exclusive construction features which seal every crevice and provide remarkable protection.

Whether you use transparent bags now or have considered them unsuited to your products, you will want to investigate this new Dobeckmun invention. Write for samples and quotations without obligation.

U. S. Patents Nos. 2,149,872; 2,095,040; 2,074,992; 1,899,207; 1,780,142. Other U. S. and Foreign Patents pending.





Self shaping. Even a light weight product pushes out the end folds without joggling.

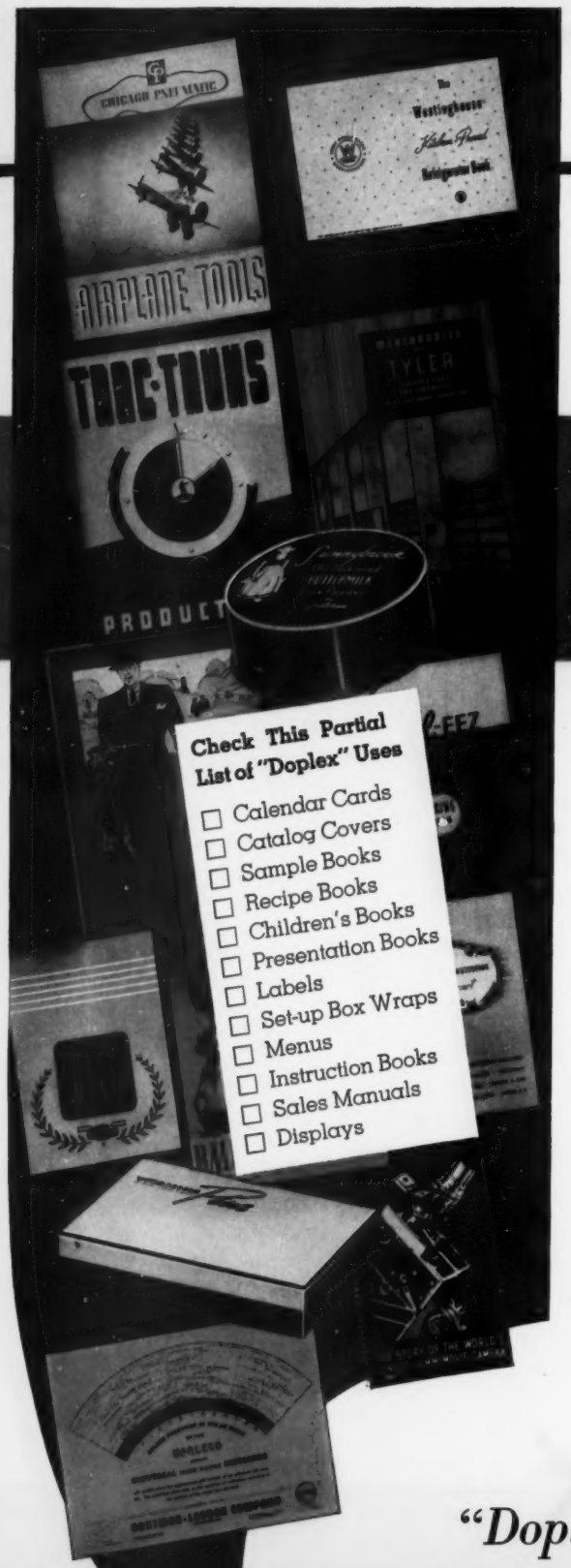
Rectangular shape. Design features tend to equalize pressure. Give a more uniform shape and appearance.



Stacks on end or side. Not only easier loading but flat bottom shape and less bulging of sides makes a safer stacking package.

Triple Glue Seam—Tighter—Stronger. Pris-O-Matic patented construction may be applied to any type of transparent film, to single or double wall bags, printed or plain. The glue seams shown red in illustration are in addition to the usual bottom and back seams.

from DOBECKMUN



PUT *Beauty* TO WORK

Selling

A good product, a printed presentation book or consumer literature can be surrounded by an exciting atmosphere of super quality—can be given a look of permanent beauty which is indeed, "—a joy forever". Simple one, two or three color covers or boxes or labels, printed with inexpensive line plates, can pack a wallop, can make an impression all out of proportion to their cost—if sheathed in the "DOPLEX" finish. Expensive full color illustrations already impressive, take on an inviting luster, a pleasant touch, an air of luxury which is quite irresistible.

PRACTICAL AND SATISFACTORY

Dobeckmun pioneered and perfected this process. Today it is in regular use by such business leaders as International Silver, Westinghouse, Frigidaire, Packard Motor Co., Libby-Owens-Ford, Du Pont, Eastman Kodak, Norge Refrigerator, American Tel. & Tel., The Hoover Co., Bausch & Lomb Optical Co. for booklet covers and presentation books, for pocket calendars and recipe books, for computing devices and lubrication charts and sample books.

In the set-up box field, a "DOPLEX" finish has been specified by leading cosmetic houses like Richard Hudnut, Helena Rubenstein, Coty, Harriet Hubbard Ayers, Pond's and many others.

THIS PAGE IS A SAMPLE. TREAT IT ROUGH.

This "DOPLEX'D" page is an actual sample. Inspect it closely. Note its tough and soil-proof surface. Spot it with ink or grease or dirt. Then see how quickly a damp cloth removes any trace of stain or blemish.

FREE DEMONSTRATION

It's very easy to get informed about "DOPLEX". Just send in samples of your present literature covers, set-up boxes or labels, or charts. Give approximate quantities in which you're interested. Your samples will be "DOPLEX'D" and returned with full information and prices.

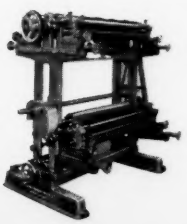
"Doplex" it for permanent beauty

THE DOBECKMUN *Cellulose Pa*

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XUM

AN *Aniline* PRESS...FOR EVERY PURPOSE

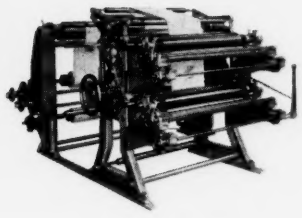


1-BAG MACHINE PRINTING PRESSES . . .

STACK TYPE—Presses with separate tympan rolls for each color section.

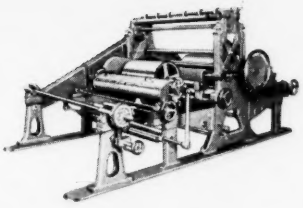
ARC TYPE—Presses with color sections adjusted around single tympan roll.

Popular unit to be run in conjunction with bag machines or used with rewinder or sheeter for close register production where sheet width is not greater than 40 inches. Built with any number of color sections.



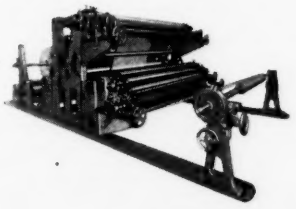
2-ROLL TO ROLL PRESS . . *FOR GENERAL WORK*

Heavy type press fitted with either center wind, single drum or double drum rewinder. Constructed for label, wrapping paper, decorated wraps or light weight boards. Every press fitted with splash proof fountain and three way adjustment for printing roll register.



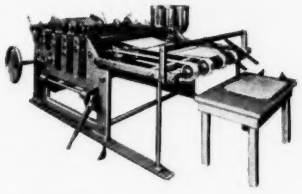
3-LARGE PRESS . . *FOR USE WITH GARMENT BAG MACHINE*

Specially constructed for work requiring an unusually long repeat. Used in conjunction with garment bag machines and similar work requiring printing rolls up to a circumference of 72 inches.



4-TINTER and OVERPRINTER . . *FOR LINER BOARDS*

Liner and board tinter and overprinter. Built for either aniline or gravure process. Embosser included in machine where desired. Widths from 50 to 105 inches handled very successfully in this machine.



5-SHEET TINTER . . *FOR CUT AND SCORED BOX BLANKS*

Sheet tinter and overprinter. Will take full sheets or box blanks that have been cut and scored. Any tint from pastel to deep shades with overprinted design effected in single operation.

●

Builders of machines for converting papers and light boards.

Hundreds of Hudson-Sharp aniline presses used by bag, label, wrapping paper, box and carton manufacturers are giving general satisfaction throughout the United States and foreign countries. Write for complete details and new brochure to-day.

HUDSON-SHARP MACHINE CO · GREEN BAY · WISCONSIN

XUM

New Ink Developments

Several recent developments in printing inks are helping container printers. The use of new types of quick-drying inks for package printing is increasing. In this process, the ink dries instantly, under heat, and cartons coming off the press may be fed directly into folders, cutters, or other fabricating machines. In addition, since the ink dries in a split-second, there is no chance for offsetting or blurring and the printed result is superior. Inks for such printing are formulated from ingredients which are harmless, and they are ideal for use in printing food containers.

Other improved inks for letterpress package printing, such as Holdfast, are providing colors with sharper printing qualities that are unusually resistant to rubbing.

In the packaging field, there has been a decided trend to gloss printing. While gloss inks are by no means new, they have been substantially improved and recently they have enjoyed a very definite vogue. These inks serve substantially the same purpose as an overprint varnish, at a considerable saving.

The important consideration, where gloss inks are to be used, is the type of paper stock for the job. It is necessary that the ink maker have this information, so that he can adjust his formulations accordingly.

In lithography, both on paper and on metal, the new Lithox inks are being widely adopted. More than two million pounds of these offset inks were used last year. These inks are important to packagers, because of their superior qualities of resistance and, in many cases, because of their stronger colors.

During 1938 and 1939 there was a revival in aniline printing, stimulated, in part, by the development of new aniline inks that are fast to light and resistant to water bleed. They dry almost instantly on the press and may be formulated to pass the most rigid tests for food use.

New aniline inks have been produced recently for use on kraft or white paper; for transparent aniline printing; and for printing on cellophane. This third type is thoroughly opaque.

Improved wax-set inks for use on paper milk bottles and other dairy product containers have been partially responsible for the increased volume and higher quality of work in this field.

PROPERTY TESTS OF COMMON PIGMENTS USED IN PRINTING INKS. COMPILED BY CARL E. FOSS*

Pigment	Indoor	Outdoor	Paste	Alcohol	Acid	Alkali
Inorganic Group						
Raw Umber	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Raw Sienna	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Burnt Umber	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Burnt Sienna	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Cadmium Red	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
English Vermillion	Excellent	Good	Excellent	Excellent	Excellent	Excellent
Orange Mineral	Good	Poor	Excellent	Excellent	Good	Good
Chrome Yellow	Excellent	Excellent	Excellent	Excellent	Good	Poor
Cadmium Yellow	Excellent	Good	Excellent	Excellent	Excellent	Excellent
Zinc Yellow	Excellent	Poor	Fair	Excellent	Poor	Poor
Chrome Green	Excellent	Excellent	Excellent	Excellent	Excellent	Poor
Molybdate Orange	Excellent	Good	Excellent	Excellent	Good	Fair
Iron Blue	Excellent	Excellent	Excellent	Excellent	Good	Poor
Ultramarine Blue	Excellent	Fair	Excellent	Excellent	Poor	Excellent
Organic Group						
Bismarck Brown	Fugitive	Poor	Poor	Fair	Poor	Poor
Maroon	Excellent	Fair	Excellent	Good	Excellent	Poor
Madder Lake	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Rhodamine	Fugitive	Poor	Poor	Poor	Fair	Poor
Rhodamine (Perm)	Good	Good	Excellent	Poor	Excellent	Good
Eosine	Fugitive	Poor	Poor	Poor	Poor	Poor
Lithol Rubine	Excellent	Poor	Fair	Good	Poor	Poor
Lithol Red	Good	Fair	Excellent	Good	Excellent	Poor
Scarlet Pulp	Fair	Poor	Poor	Excellent	Poor	Poor
Pigment Scarlet	Excellent	Fair	Poor	Excellent	Poor	Poor
Para Red	Excellent	Excellent	Excellent	Poor	Good	Excellent
Toluidine	Excellent	Excellent	Excellent	Fair	Excellent	Excellent
Red Lake D	Good	Fair	Excellent	Good	Poor	Good
Red Lake C	Fair	Fair	Excellent	Good	Excellent	Fair
Fire Red	Excellent	Excellent	Excellent	Fair	Excellent	Excellent
Permatone Orange	Excellent	Excellent	Excellent	Good	Excellent	Excellent
Orange II	Fugitive	Poor	Poor	Good	Poor	Poor
Benzedine Yellow	Excellent	Excellent	Excellent	Excellent	Excellent	Poor
Hansa Yellow	Excellent	Excellent	Excellent	Good	Excellent	Excellent
Tartrazine Yellow	Poor	Poor	Poor	Excellent	Poor	Poor
Quinoline Yellow	Poor	Poor	Poor	Fair	Poor	Poor
Naphthol Yellow	Poor	Poor	Good	Excellent	Poor	Poor
Acid Green Lake	Fugitive	Poor	Poor	Good	Poor	Poor
Malachite Green (Perm)	Good	Fair	Excellent	Good	Excellent	Excellent
Brilliant Green	Good	Fair	Excellent	Good	Excellent	Excellent
Setoglaucine	Good	Fair	Excellent	Fair	Excellent	Good
Patent Blue	Fugitive	Poor	Poor	Excellent	Poor	Poor
Methylene Blue	Fair	Poor	Poor	Excellent	Poor	Fair
Induline Blue	Fair	Poor	Excellent	Fair	Good	Good
Indigo	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Alkali Blue	Excellent	Fair	Excellent	Poor	Excellent	Fair
Victoria Blue	Good	Good	Excellent	Poor	Excellent	Excellent
Methyl Violet	Fugitive	Poor	Good	Poor	Poor	Poor
Methyl Violet (Perm)	Good	Good	Excellent	Fair	Excellent	Excellent
Alizarine Purple	Fair	Poor	Poor	Excellent	Poor	Poor
Phthalocyanine Blue	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Phthalocyanine Green	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

* International Printing Ink Corp

XUM



"WHEN A DECADE OF PROGRESS is compressed into a short space of time, we call that a revolution." That is what has happened in the development of inks for package printing.

From one research laboratory have come dramatic new materials that improve appearance, speed up fabrication, and lower costs. IPI's research facilities have produced such new products as *Vaporin,* the instant-drying ink for finer high-speed printing; *Holdfast,* an ink that provides cleaner printing with remarkable rub and scratch-resistant properties; *Lithox,* a new ink for lithographing on paper or metal which prints sharper, dries faster, and adheres more firmly to the container surface.

Other recent IPI achievements of interest to packagers are Glo-Ray inks for finer gloss printing, and a new line of pigmented aniline inks, which are fast to light and to water bleed.

The All-America and Irwin D. Wolf award winners shown here used IPI inks. If YOU want to know what's new in package inks and what ink can contribute to creating a finer printed container "keep in touch with IPI."

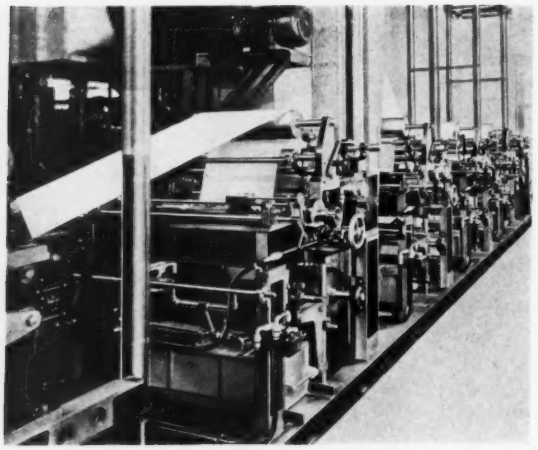
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INTERNATIONAL PRINTING INK
DIVISION OF INTERCHEMICAL CORPORATION
DEPT. P.C.4 75 VARICK STREET, NEW YORK CITY

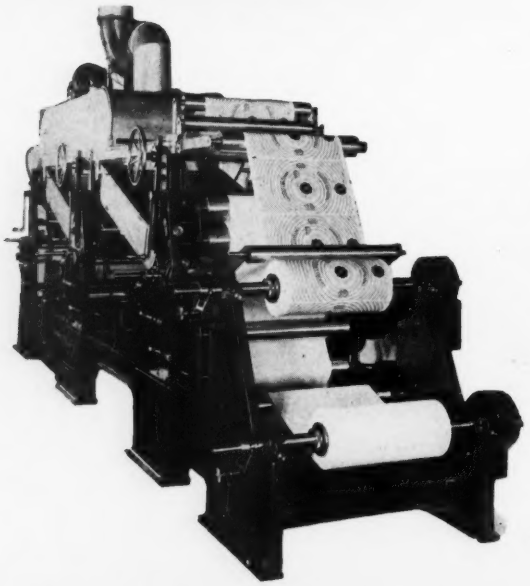
XUM

Package Printing Machinery

by ALFRED A. MORSE



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In selecting package printing machinery some of the questions to be considered are:

1. What is the speed of the press?
2. How many colors can be printed?
3. Is the quality of printing satisfactory?
4. Can the new fast drying inks be used?
5. Can the press be changed over from one job to another quickly and economically?
6. How many sizes will it take?
7. What types of paper and board can be handled on the press?
8. What supplementary operations, such as coating, lacquering, etc., can be performed on the press?
9. Can the same press be used to re-wind, slit, cut sheet, punch, score and deliver the finished piece ready for use in subsequent packaging operations?
10. What economies will the equipment effect over present methods?

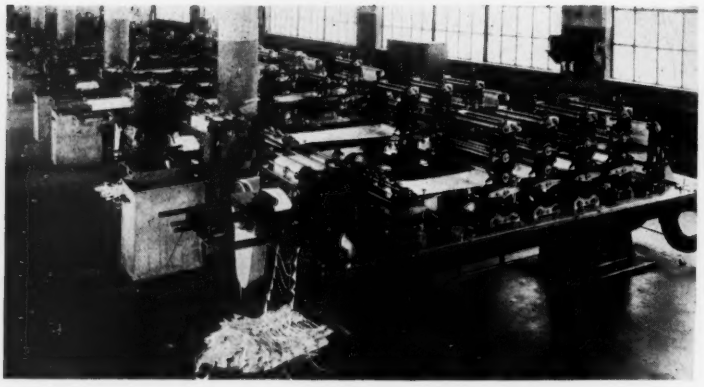
From the production viewpoint, automatic printing presses fall into two general classifications:

(1) Presses in which the paper is fed to the press in sheet form.

(2) Presses in which the paper is fed to the press in web form from a single continuous roll.

The first classification includes presses such as the Clayburn. This is a multicolor, sheet-fed, rotary press available in two sizes and designed to print in from one to five colors. These presses can be started quickly and operated at high speeds. The manufacturers of this press also offer a five-color web label press which prints from the roll and delivers it in web form.

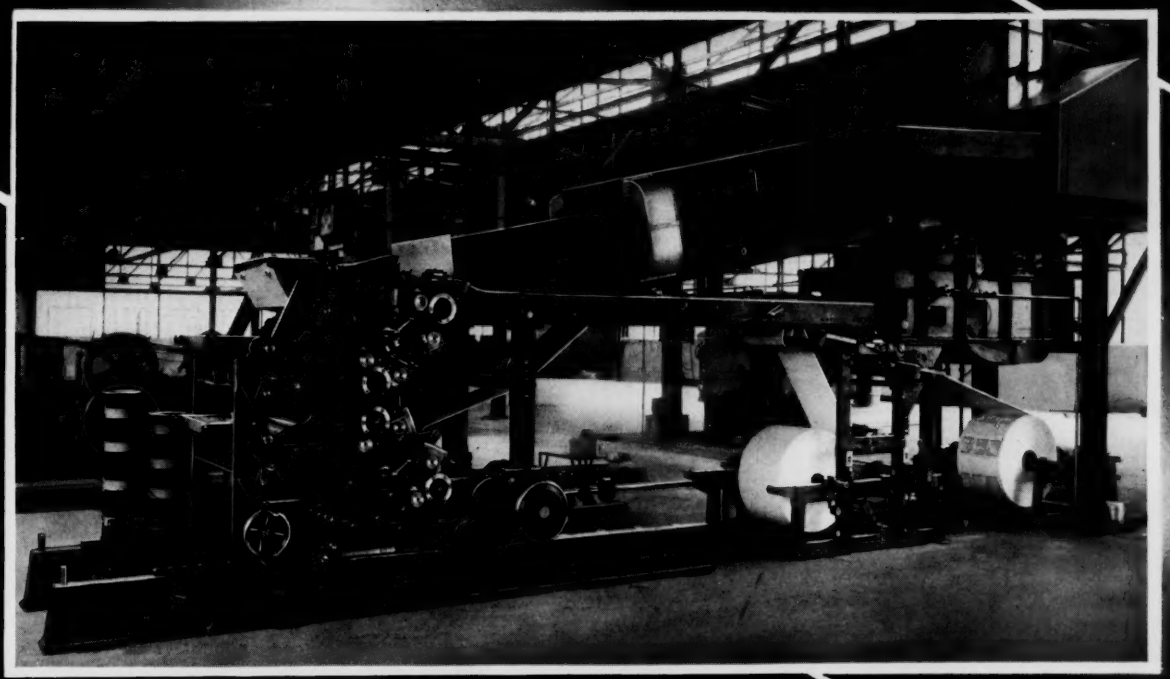
The second classification includes such presses as the New Era Press, Chambon and Champlain Letterpress, the Champlain-Weiss Speedry Gravure Press. The New Era Press operates with an intermittent motion; the other



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1. Champlain gravure press for multi-color work. Web feed. **2.** Three-color Hyroto rotogravure printing press. **3.** Battery of Chambon presses at plant of paper container manufacturer. Printing and cutting of container blanks are performed automatically and completely on these machines working directly from roll stock.

XUM



Are You Ready for *Flashdri?*

Above is shown a recent installation for low temperature, high speed drying with Flashdri Inks. Photo courtesy of Benjamin C. Betner, Devon, Pa.

• • • • Our engineers will gladly consult with you regarding equipment installations

Most web presses can be equipped to use the revolutionary FLASHDRI, instant-drying inks. Designs created by our own experts for special dryers applicable to various types of web presses are available to customers without profit. • FLASHDRI is particularly suited to the printing of cartons, labels and wrappers because it permits finer printing at greater speed without offset, produces higher gloss, and is notably odorless. FLASHDRI Varnish is available with instant drying characteristics for use on the same equipment where conditions demand.

LEVEY Inks

FLASHDRI, LETTERPRESS, OFFSET AND HIGH-SPEED GRAVURE INKS

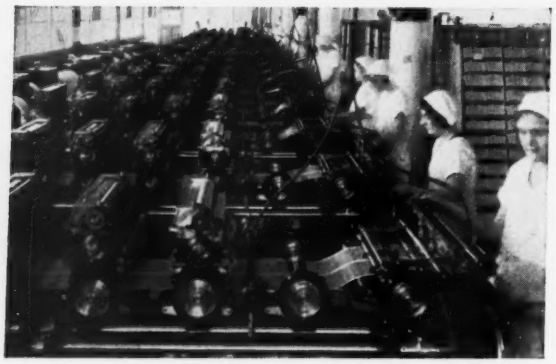
FRED'K H. LEVEY CO., INC.

DIVISION OF COLUMBIAN CARBON CO

PHILADELPHIA . . . NEW YORK . . . . . CHICAGO

BOSTON • BROOKLYN • BALTIMORE • CINCINNATI • CLEVELAND

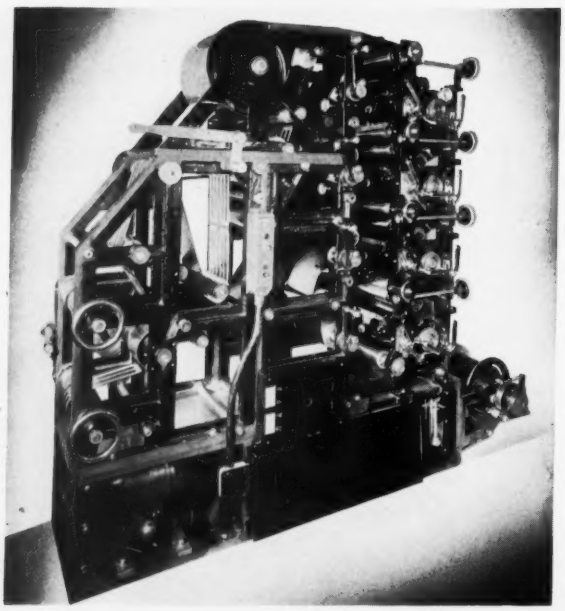
SPRINGFIELD, O. • SEATTLE • SAN FRANCISCO



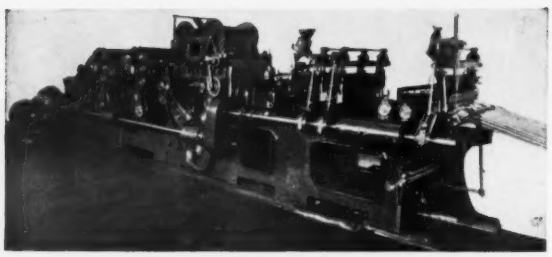
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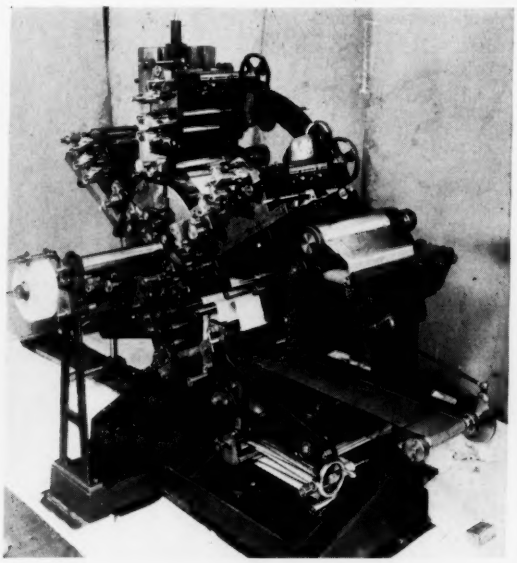
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types mentioned operate continuously. Paper is furnished to them in rolls and travels through the presses in a straight line. Any type of paper up to 25 point board may be printed successfully, a feature of particular interest to converters. The major feature of the Chambon, Champlain-Weiss and Champlain printing machines, of interest to printers, is their almost unlimited size range and the fact that the same machine can be used to fabricate the printing web and deliver it ready for use in subsequent packaging operations. All printing and fabricating operations are performed by separate units mounted successively on the same base. Machines can be designed to perform such operations as scoring, creasing, embossing, numbering, perforating, slitting, and re-winding, sheeting, dieing out to shape, coating, spot varnishing, etc.

These machines are designed to print webs up to 36 in. wide and to run at speeds up to 800 feet per minute. A machine of this type, producing a carton once across the web, is a very economical unit where the production runs into millions. Plates sometimes last more than 500,000,000 impressions. Engravings, furnished to order by the manufacturers of the machine, are solid, chrome-plated bronze shells. Curved electros, stereos, and even rubber plates are being used on this type of press with success, provided the designs are not complicated. For background or solid colors a dry offset unit can be substituted for one of the typographic units, resulting in a better lay of ink and economy in its use. The addition of a Selas burner at one end of the press permits the use of quick-drying Vaporin inks.

4. Chambon multi-color presses at a food packing plant. **5.** Champlain machine printing and fabricating display trays. Note roll feed device. **6.** Champlain-Weiss four-color press with slitter and spindle re-winder. **7.** New Era web feed printing press. **8.** Meisel multi-color web printing press. Web runs around central cylinder to contact each press in sequence.

8



XUM

JOHN WALDRON CORPORATION

MAIN OFFICE AND WORKS—NEW BRUNSWICK, N. J.

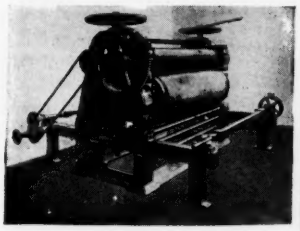
NEW YORK—350 Madison Ave. CHICAGO—201 N. Wells St. PORTLAND, ORE.—2860 N. W. Front Ave.

WALDRON-MACHINES
OVER A CENTURY OF EXPERIENCE BUILDING PAPER CONVERTING MACHINES
SINCE 1827

Manufacturers of Machines for

EMBOSSING—PRINTING—COATING
WAXING—LAMINATING—LACQUERING
SLITTING—REWINDING—DRYING

HOT MELT COATING
AUTOMATIC GUIDERS



"Centennial" Embossing Machine

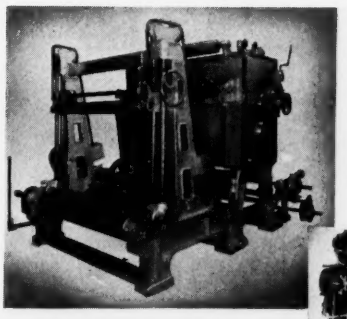
Waldron Embossing Machines are built in a wide range of types for producing desired effects on any material with roll embossers. Each machine rigidly built and correctly designed and proportioned with respect to the important factors of speed, pressure, and tension for particular requirements.

Waldron Embossing Rolls provide a longer life due to the use of carefully conditioned paper in their construction and their harder, more even surface.



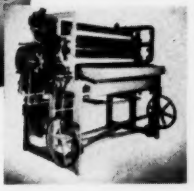
The New Waldron Fluid Ink Press

Designed to distribute any type of fluid ink—water colors, aniline, pigment lacquer, rotogravure, letter press, and surface printing inks. Adaptable for tandem operations. Surface prints may be superimposed upon engraved effects when using inks of light base. Quickly convertible from engraved to surface printing operation and vice versa. Various models are proportioned for handling goods of all widths of from 30 inch up to 90 inch with equal accuracy.



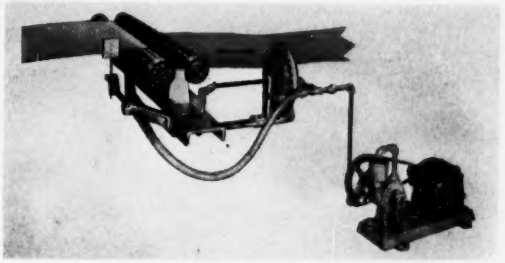
Left: Waldron Hot Melt Coating Machine.

Below: Hot Melt Inking—Distribution for printing.



Hot Melt Coating and Printing

This new line of equipment designed particularly for coating and printing the new synthetic compounds at elevated temperatures, eliminates the necessity of solvents in coatings and inks. No drying apparatus, wax sprays or slip sheets are necessary. For printing operations it is quite possible we may convert your present presses at moderate cost. Why not consult us?



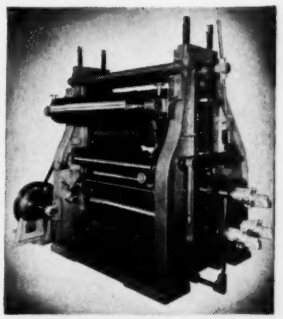
Waldron Automatic Web Control. The Waldron-Dickhaut Automatic Web Guide for guiding paper in processing insures more uniform finish and bundle—cutting down waste.



Waldron Lacquer Coater

Waldron Coating Machines are available in knife, combination roll and knife, roll coaters, reverse roll brush type and Bracewell Centrifugal Contour covering the entire range of coating requirements. Regardless of the kind of coating material used—thin staining material for tints, waterproof material, varnish, lacquer, or clay—a Waldron machine can be depended upon to apply it faster, smoother, and better.

The Waldron Reverse Roll Coater is specially designed for the application of quick drying lacquers or varnishes.

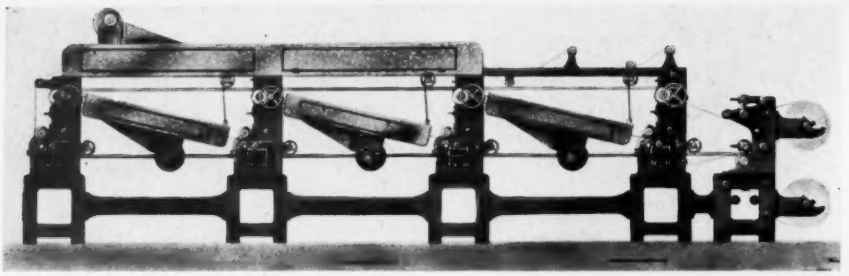


New Waldron Laminating Machine for Cold and Hot Melt Adhesives

For the combining of cloth, paper, regenerated cellulose and boards using paste, asphalt, lacquer, latex, thermoplastics and hot melts. Ideal for applying adhesive to transparents smoothly and without "ribbing."

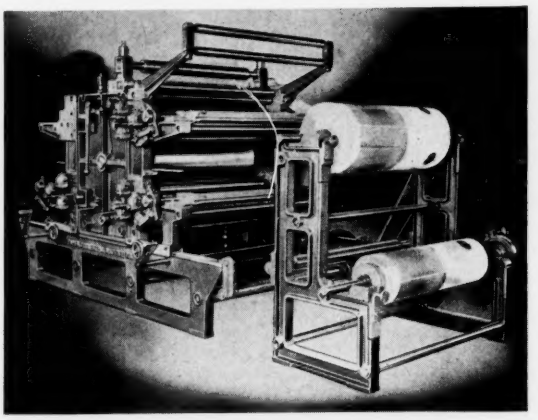
Engineering Service

To assist in solving your particular processing and production problems. Inquiries of any nature invited and treated in confidence.



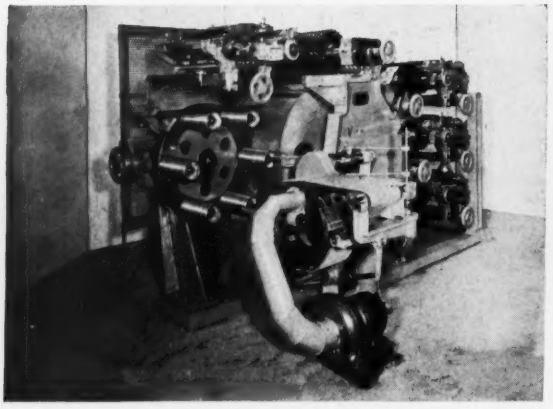
9. This Klingrose multi-color gravure press is designed to handle a wide variety of papers ranging from lightweight to board stock and including glassine and transparent films.

10

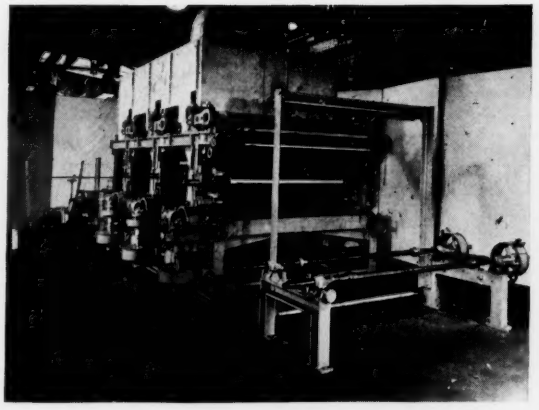


10. Arc type web press for printing one to six colors with rotary register. Made by Paper Converting Machine Co. **11.** Waldron container printer, letter-press offset type. **12.** Waldron rotogravure printer with drying units between each printer.

11



12



The newer gravure presses are capable of delivering a form as large as 36 in. by 42 in. and as small as 2 in. by 5 in. and almost any size between these dimensions. Extremely flexible in operation, they permit the printer to change four colors and change sizes in as little as one or two hours.

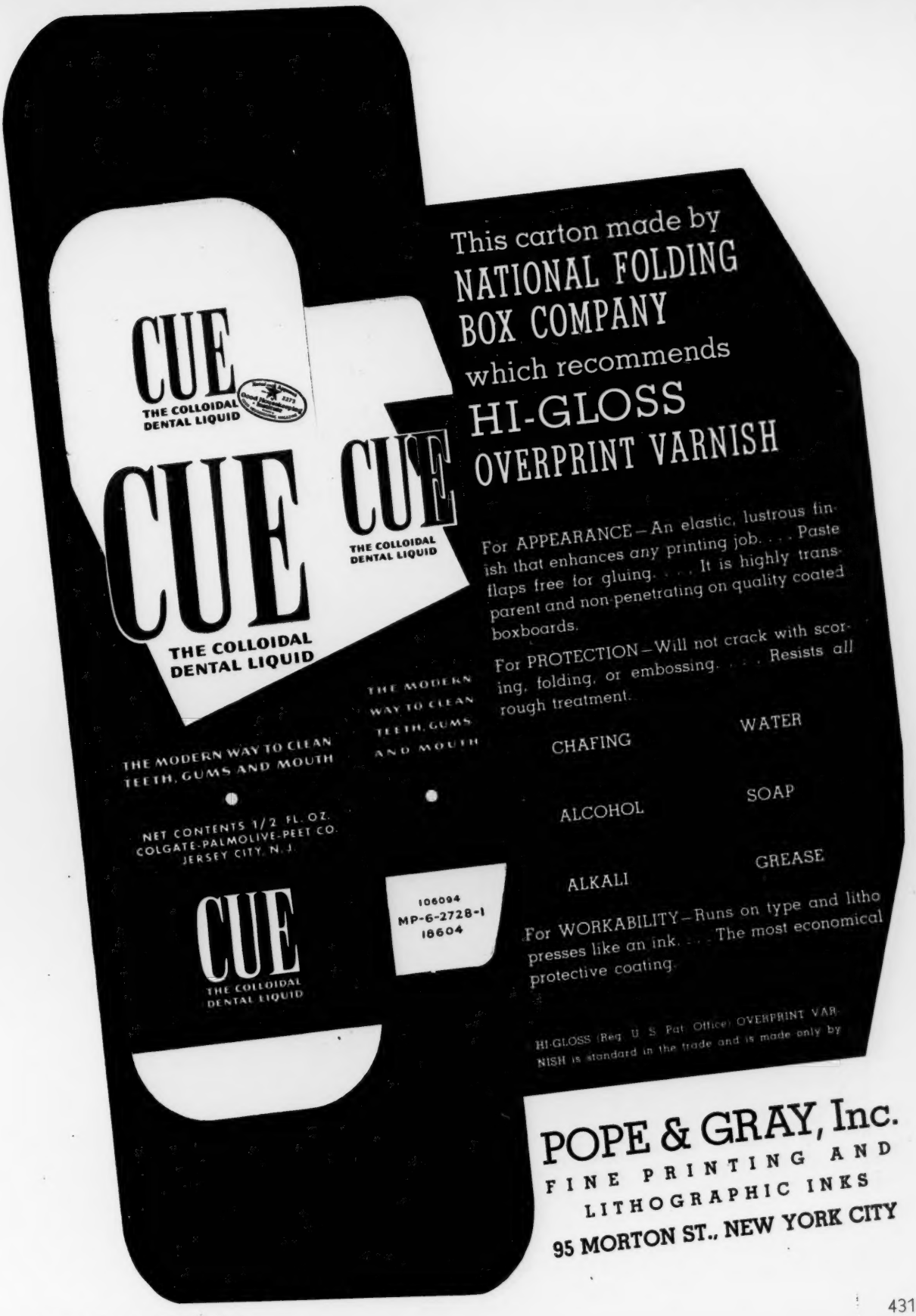
The introduction of these presses has brought to the producer of package printing all the advantages of fine process printing with the economy of high speed gravure printing. The detail of a 150-line screen engraving can be obtained on rough board; the pressure used virtually plates or irons the board or paper into the engraving so that every detail is obtained as easily as from a coarse line cut in letter press printing. Major features of these presses are the method of ink application to the gravure printing cylinder and the high ratio of live to dead web.

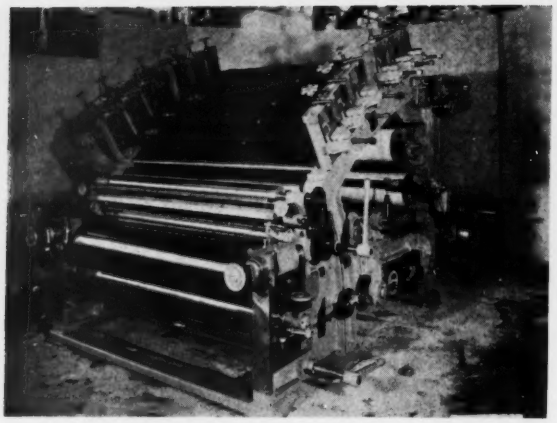
Chambon and Champlain printing machines may be equipped with a photoelectric register indicating device for the control of longitudinal register of the colors as well as the cutters, punchers and perforators.

Automatic printing machines such as described are ideally suited for the production of labels, cartons, bags, containers, bread wraps, printed foil, decorative and fancy papers, tea tags, magazine covers, enclosures, etc.

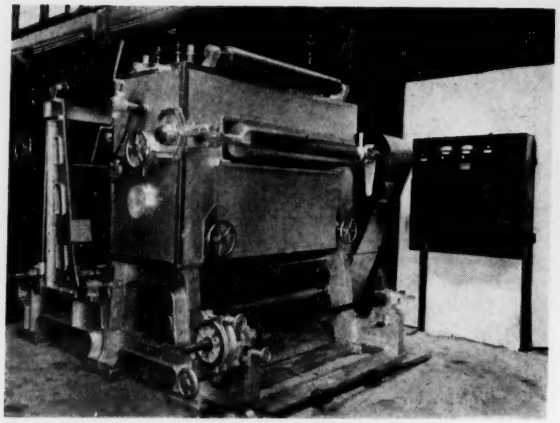
A feature of the Champlain-Weiss equipment is that the printing units can be easily adapted and synchronized to almost any type of packaging equipment. Labels and wraps may be printed and the former applied to the latter all in one operation because the inks dry instantaneously and without odor. They operate automatically and are simple to maintain.

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CUE
THE COLLOIDAL DENTAL LIQUID
CUE
THE COLLOIDAL DENTAL LIQUID
CUE
THE COLLOIDAL DENTAL LIQUID
THE MODERN WAY TO CLEAN TEETH, GUMS AND MOUTH
THE MODERN WAY TO CLEAN TEETH, GUMS AND MOUTH
NET CONTENTS 1/2 FL. OZ.
COLGATE-PALMOLIVE-PEET CO.
JERSEY CITY, N. J.
CUE
THE COLLOIDAL DENTAL LIQUID
106094
MP-6-2728-1
18604
This carton made by
NATIONAL FOLDING BOX COMPANY
which recommends
HI-GLOSS OVERPRINT VARNISH
For APPEARANCE—An elastic, lustrous finish that enhances any printing job. . . . Paste flaps free for gluing. . . . It is highly transparent and non-penetrating on quality coated boxboards.
For PROTECTION—Will not crack with scoring, folding, or embossing. . . . Resists all rough treatment.
CHAFING
WATER
ALCOHOL
SOAP
ALKALI
GREASE
For WORKABILITY—Runs on type and litho presses like an ink. . . . The most economical protective coating.
HI-GLOSS (Reg. U. S. Pat. Office) OVERPRINT VARNISH is standard in the trade and is made only by
POPE & GRAY, Inc.
FINE PRINTING AND LITHOGRAPHIC INKS
95 MORTON ST., NEW YORK CITY



1. Combination roll and brush coater for clay coatings. Photos courtesy John Waldron Corp.



2. Hot melt coater used for the application of lacquers or resins that have a solid nature.

Coating, Laminating and Embossing

by FRANK W. EGAN *

The four horsemen of converting are coating, laminating, printing and embossing operations. They are the main factors. In the manufacture of labels, wraps, covers, catalogs, inserts, containers and boxes, they play an important part. Today, more than ever, there is a demand for special machines for these four operations. New ideas have been the origin of this equipment.

Coating

There are two types of coating—one is protective and the other is decorative. The protective type includes coating of paper to protect its surface and the coating of paper to protect its contents where it is used as a wrapper.

Decorative includes coating paper where it is used for printing or where it depends upon a high gloss to give it a special finish.

There are various types of coating machines, such as brush, roll, knife and spray, and each of them have their own advantages. The type of coating that is used will determine the kind of coating machine that will best apply the coating, i.e., the coating may be of either low or high viscosity and it may have a high or low surface tension. Coatings that have a tendency to brush mark can be applied more readily on a roll or knife coater. Some coatings have a tendency to rib. In this case, they can be handled on a roll coater, for ribbing generally means that the coating has a high surface tension. Such coatings are better run in high viscosities on a knife coater. A spray coater can be used to advantage on rough surfaces, but its weakness is that it is wasteful and has a tendency to dry the coating during the spraying operation, leaving an orange peel effect.

Clay-coating, today, is still used to produce the best printed effects, for it has been found that minerals present a fine surface for printing inks to obtain the best possible printed effect.

For the application of lacquer, a roll or knife coater is used. The roll coater will apply a coating that can be applied on a brush coater, that is, a coating having the same viscosity, but the knife coater will apply lacquers having a solid content of 70 to 80 per cent. This proves a great saving in solvent and reduces the fire hazard to a minimum. Both clear and metallic, as well as pigmented lacquers, can be applied on the knife coater, but the knife coater has to be of a special type. It cannot be of the old fashioned arrangement, where no blanket and no specially ground doctor with controls is utilized.

Of late, there has been some tendency to coat paper by printing it, but this has not been successful for the reason that to obtain good coated surfaces the coating must have flowability, and this characteristic is just the opposite of what the coating should be to be printed.

The popularity of lacquer coated papers has created a demand for a lacquer that is solventless and does not prove a fire hazard. Such a lacquer has been produced. The lacquer comes in a solid form and has a melting point of around 180 deg. and is best applied at a temperature of around 300 deg. With these melting and applying temperatures, blocking is eliminated and you can apply the lacquer to the paper surface at a speed of from 200 to 300 ft. per minute. The machine for applying this lacquer, necessarily, must be a precision machine, for one ten thousandth of an inch setting on the application rolls applies a pound of lacquer to a ream of 25 by 38—500 basis. The rolls have to be large in diameter, accurately ground and special arrangements made to heat the rolls and keep this heat uniform across the face, so that the roll maintains an accurate diameter.

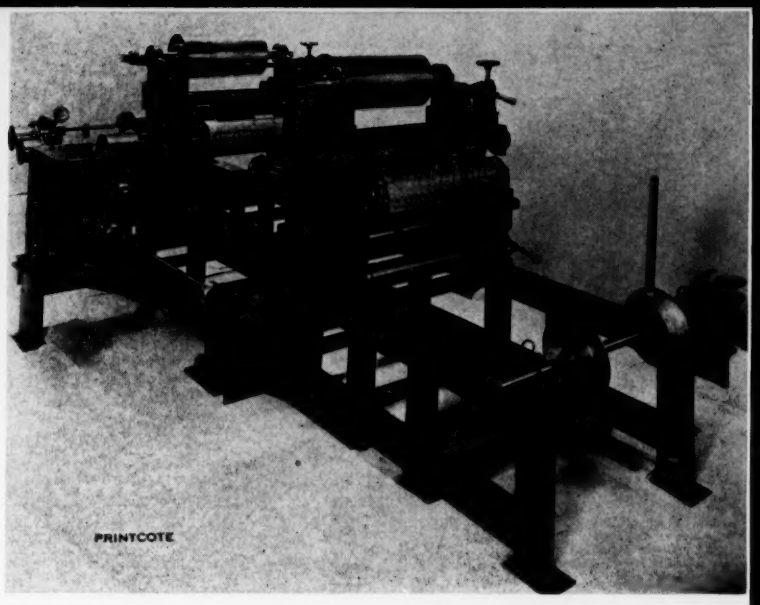
* John Waldron Corp.

ROTOGRAVURE

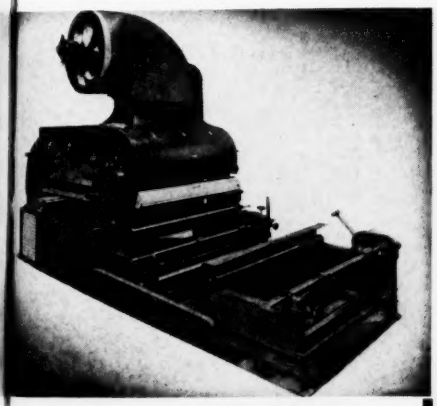
IS NOT EXPENSIVE!!

All standard PRINTCOTE Rotogravure Machines

are built so that additional color units may be added at any time. Thus your first investment need only be made in a one- or two-color installation.



Coating or Gravure Printing Machine. Just one example of the extensive line of Printcote Paper Converting Equipment.



Also Manufacturers of Quality!

Spot Sheeters
Coating Machines
Combining and Laminating Equipment
Liner Stock Colorers
Gumming Devices
Gravure Printing and Waxing Machines

And Special Equipment To Order
For the Paper and Printing Trades

Installation of a PRINTCOTE Machine will bring you all the profitable advantages of rotogravure printing: at low costs that are little short of astonishing.

For example, on 16" to 26" widths of stock, you can obtain PRINTCOTE complete installations, giving perfect register at high speeds, at the following low prices:

One color	from $2800.00
Two colors	" 5500.00
Three colors	" 9000.00
Four colors	" 11,700.00

Widths up to 60" may be handled on PRINTCOTE machines at correspondingly low investment.

It will pay you well to get the full story on these remarkable new PRINTCOTE machines that bring you fine quality rotogravure printing at costs that are profitably low. Write us today.

Originators of the Printcote All Purpose Machine

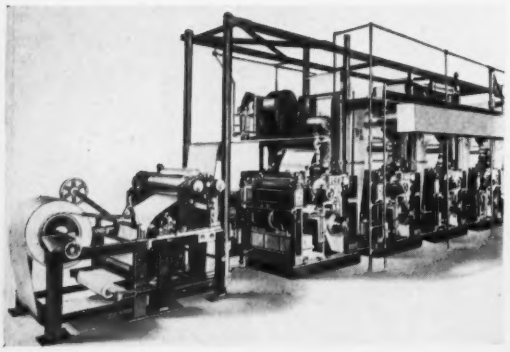
The PRINTCOTE Co., Inc.

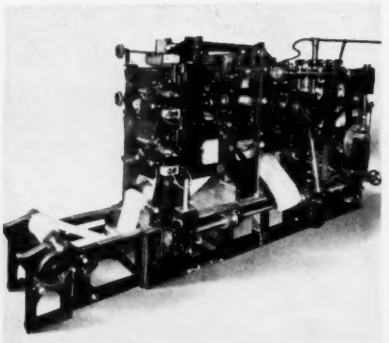
MANUFACTURERS OF FINE PRINTING AND PAPER CONVERTING MACHINERY

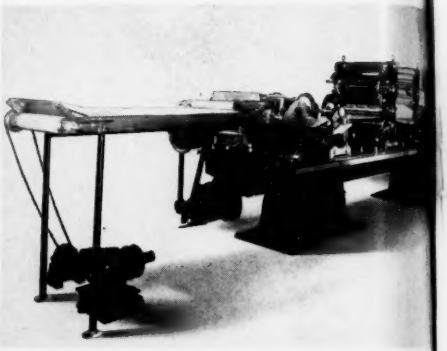
370 SEVENTH AVENUE NEW YORK

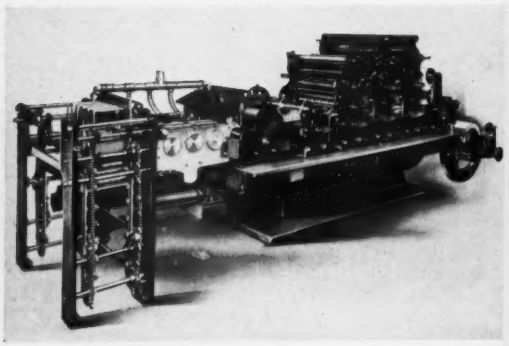
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CHAMPLAIN

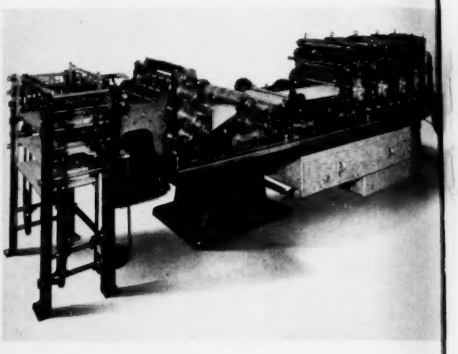


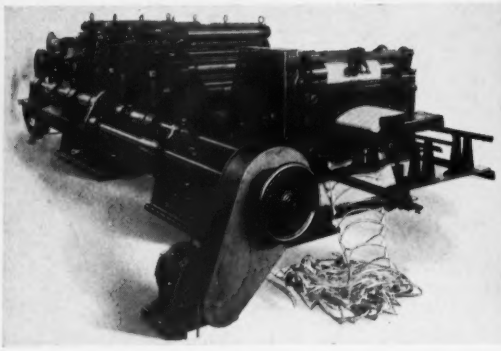


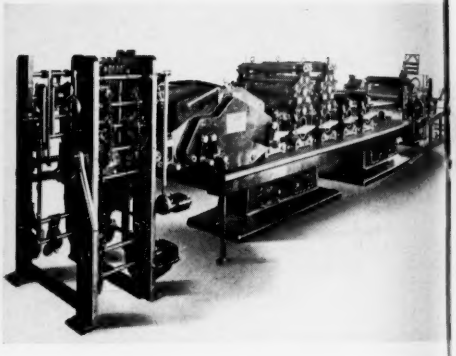


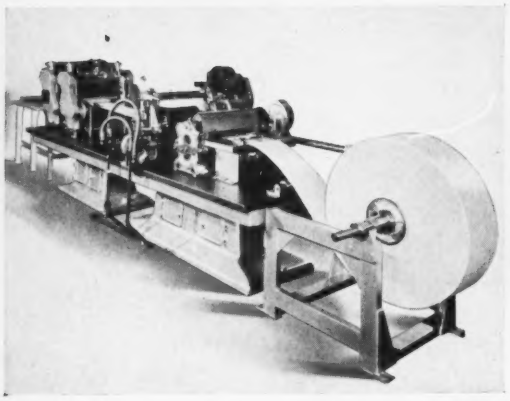


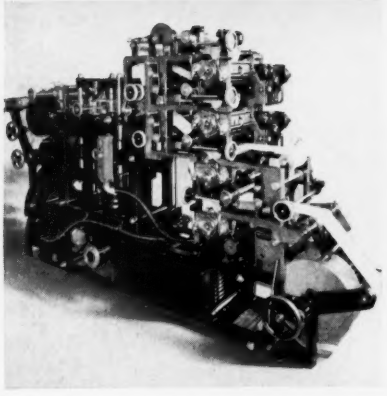
CHAMPLAIN

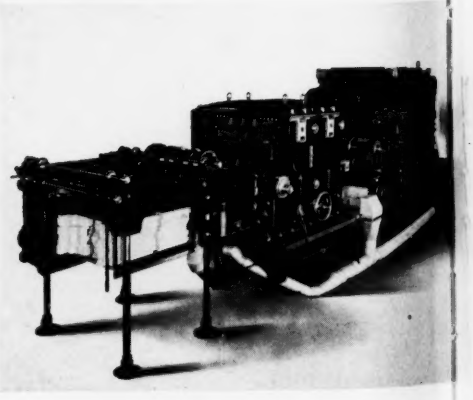












PRESSES

XUM

Designed for All Types of Package and Specialty

PRINTING . . .

Champlain Gravure Presses, Chambon and Champlain Letterpresses, and Champlain-Weiss Speedry Gravure Presses are designed for the high speed production of fine quality multicolor package and specialty printing. They are designed to print labels, wraps, bags, cartons, containers, fancy paper, ribbons, specialties, etc. at unit costs which usually show substantial savings over ordinary methods.

Utilizing gravure or letterpress printing processes (combinations in some cases), these presses print in any number of colors from a roll of paper or board and deliver the printed job either rewound or fabricated ready for use. Noticeable economies in paper costs and handling time are effected.

Operations such as slitting, cutting, scoring, perforating, sheeting, punching, coating, lacquering, etc. are performed, if desired, by additional units mounted on the same press.

ENGINEERING DATA

Name	Type	Type of Printing	Type of Feed	Maximum Web Width	Maximum Printing Width	Minimum Cylinder Circum.	Maximum Cylinder Circum.	Rewinding (Rated Speed) F.P.M.
CHAMPLAIN	IC	Letterpress	Roll	14"	13¾"	9½"	14"	150
CHAMPLAIN	1-G	Letterpress	Roll	17"	16½"	8"	16"	300
CHAMPLAIN	2-G	Letterpress	Roll	24"	23½"	15"	31"	450
CHAMPLAIN	3-G	Letterpress	Roll	17"-20"	16½"-19½"	15½"	26"	350
CHAMPLAIN	4-G	Letterpress	Roll	32"	31"	18"	36"	400
CHAMPLAIN-WEISS	V-2	Rotogravure	Roll	2¼"	2"	5"	9"	150
CHAMPLAIN-WEISS	V-3	Rotogravure	Roll	3¼"	3"	5"	9"	150
CHAMPLAIN-WEISS	V-4	Rotogravure	Roll	4½"	4"	6½"	11"	300
CHAMPLAIN-WEISS	V-6	Rotogravure	Roll	6½"	6"	6½"	11"	300
CHAMPLAIN	B-14	Rotogravure	Roll	14"	13¾"	9½"	18¾"	600
CHAMPLAIN	F-16	Rotogravure	Roll	16½"	16"	15"	26"	600
CHAMPLAIN	H-20	Rotogravure	Roll	20½"	20"	16"	32"	600
CHAMPLAIN	P-26	Rotogravure	Roll	26½"	26"	17"	35"	600
CHAMPLAIN	P-31	Rotogravure	Roll	31½"	31"	17"	35"	600
CHAMPLAIN	D-36	Rotogravure	Roll	36½"	36"	23½"	34½"	600

Chambon, Champlain, and Champlain-Weiss Presses print from cylindrical printing plates produced by our engraving department. Gravure and letterpress engravings are made to standards which insure faithful reproduction of the original copy. Makeready is eliminated. Change-overs from one job to another are made easily and quickly.

Printing register on our presses is accurate and under the instant control of the operator. If desired, presses may be equipped with the Champlain Photoelectric Register Control and a central control panel, insuring accurate register of the web for all printing and fabricating operations.

The Champlain-Weiss Presses include types which can be mounted direct on the packaging machinery so that printing can be produced as needed in the packaging operation.

Printers are invited to submit their inquiries covering presses to meet their production requirements. Please furnish samples and production data if possible.

CHAMBON CORPORATION

GARFIELD, N. J.

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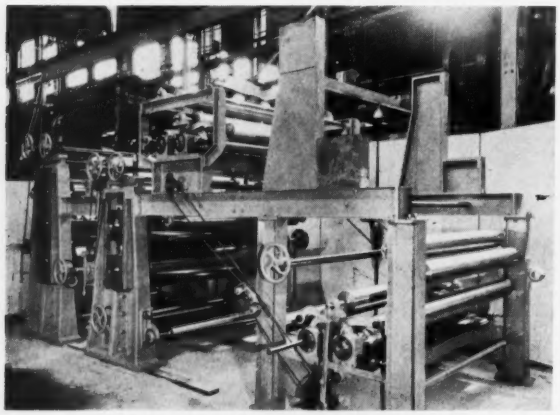
Manufacturers are producing hot melt lacquers and resins which produce high gloss, moisture-proofness, some oil-proofness and which have other advantages. The art is new, but it is progressing rapidly.

Combining

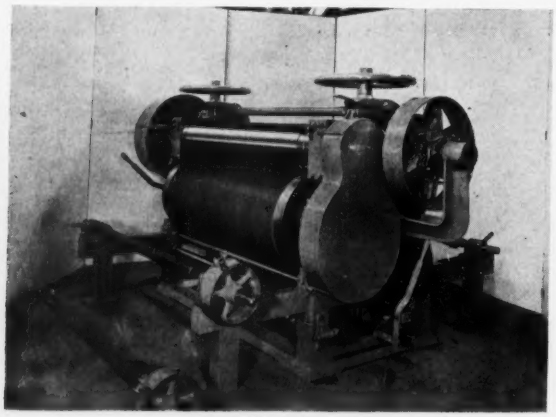
Combined stock presents a product that cannot be made on a paper or board machine. For instance, you can combine glassine, book, coated paper, cellophane or Pliofilm to paper or board, using starch, silicate, asphalt, lacquer or hot melt adhesive. The combining operation also permits the manufacturer to produce a heavy caliper board which has rigidity.

Not many years ago, combining machines were used which required a heavy coating of paste, making it necessary to pass the combined web around steam dryers.

It has been found that paste can be run having a solid content of 45 to 50 per cent, and 1 to $1^1/_2$ lbs. of paste can be applied per 1000 sq. ft., instead of 3 to 4 lbs., and the bond may be made in a single nip. In applying the paste in this fashion, no dryers are required. This has a particular advantage in that the combined web is not carried around a dryer, thereby flexing the board and lessening the rigid character that is often required in a combined web. The combined web is taken directly from the combining machine to a sheeter cutter.



3. Laminating machine for combining three, four and five plies at a speed of 400 ft. per minute.



4. Open front embossing machine of the web type. Photos courtesy John Waldron Corp.

The more simple the combining machine is, the better the product obtained will be, for in any operation the operator must have ready access to all parts and be able to lift the web from the paste rig during a short shut-down period to make splices.

Foil, both aluminum and tin, as well as cloth are used a great deal today in combining to board and paper. Foil is handled readily on these units, but requires special unroll and tension features. Cloth is handled without pressure in the combining machine as it is simply run "S" fashion.

Asphalt is being used to a great extent today as an adhesive. It makes a good bond and, at the same time, gives a protective coating of a moisture-proof nature. Its only disadvantage is its color. On some light-weight papers, it has a tendency to show through the stock. For this reason, the hot melt resins are being used to a great extent, for they provide a moisture-proof film between the webs which are combined and they have all the advantages of asphalt.

Laminating cellophane or Pliofilm to paper or board requires special equipment, as both of these films are moisture-proof (where moisture-proof cellophane is used). The solvent has to be removed from the adhesive before the bond is made, otherwise blisters form.

Where the combined product is not sheeted in tandem with the combining machine and is re-wound, it is well to use as large cores as possible and not leave the combined product on the cores any length of time so that the combined web takes a set, in which case a decided curl would result. It is the best practice to sheet the combined product in tandem.

Embossing

The final effects needed to soften the printed results and produce depth are supplied by the embossing operation which enriches the label, catalog or cover stock. This embossing may be male and female, or a flat back design. Flat back has a tendency to produce sheen for, as a general rule, fine designs that produce two-toned effects are used.

Where webs are to be combined, it is best to emboss the cover paper and then combine it, for the combining operation takes away a great deal of the embossed effect. For producing the best embossed results, the steel engraved roll should be bored for steam. Usually the steel roll is in the top position and driven directly from the main drive shaft. The paper impression roll is geared to the steel engraved roll. Individual vertical adjustments are used and a quick release is part of the machine. Pressures can be maintained with screws, or through a weighted lever device.

For colored effects, inking attachments are mounted on the embossing machine and the ink laid in the low spots of the embossing, or it is kissed on the high spots for shadow effects; or a combination of the two.

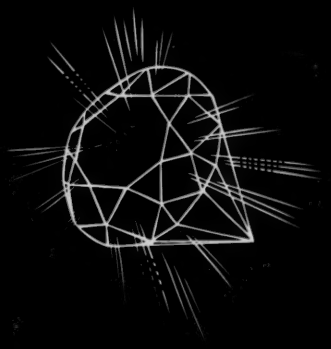
Embossing has a semi-breaking action on the fiber stocks of paper. Therefore, where strength is required an embossing operation would not be recommended.

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with Nitrocellulose Lacquer

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THE PEERLESS ROLL LEAF PROCESS
of Trademarking and Decorating for Lifetime Identification







(Top to Bottom.) A beverage label embossed with roll leaf. A tool handle stamped for lifetime identification. A fabric covered wastebasket decorated with roll leaf.

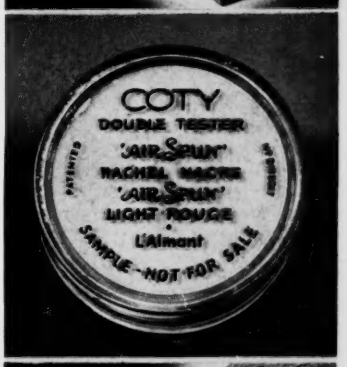
If you have a trademarking, decorating, or imprinting problem—consider the Peerless Roll Leaf Process. Using gold, silver, and colored foil, you can stamp or emboss trademarks, lettering, and decorative designs on the surfaces of papers, fabrics, leather, wood, plastics, coated metals, etc. Other materials also lend themselves to this method.

An impression made by the Peerless Roll Leaf Process is clean, bright, and durable. It will not rub off or wear off easily. It resists the effects of dirt, dust, and moisture. It provides lifetime identification for your product.

The process itself is simple, economical, easily installed, and requires but little space for its operation. All the equipment needed is a Peerless Roll Leaf Stamping Press, a steel or brass die (or type), and a roll of Peerless Leaf. The stamping or embossing can be done in your own plant or by one of your suppliers equipped with our process.

Inquiries covering specific trademarking or decorating problems are invited. If possible, send samples to be stamped.







(Top to Bottom.) A box with the trade name stamped on the cover by the roll leaf process. A transparent cosmetic container stamped with roll leaf. A leather sock lining stamped with two colors.

PEERLESS ROLL LEAF CO., INC.
913 New York Ave., Union City, New Jersey

Branch Offices: 552 Massachusetts Ave., Cambridge, Mass.—608 So. Dearborn St., Chicago, Ill.—Fairfield Works, Bow, London, E.3. *Distributors:* Printers Supply Corporation, 1142 Maple Avenue, Los Angeles, Calif.—Norman F. Hall Co., 167 First St., San Francisco, Calif.—Advance Sales, Inc., 2309-11 Locust Blvd., St. Louis, Mo.—Wilson-Munroe Co., Ltd., 18-20 Duncan St., Toronto, 2, Canada.

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Roll Leaf Stamping and Embossing

by ALFRED A. MORSE

Roll leaf stamping and embossing is a process by which gold or colored foil is transferred onto and into the surface of paper, wood, plastics, leather, etc., for decorative and identification purposes. The roll leaf process lends itself particularly well to the decoration of high grade paper and fabric-covered box tops, plastic containers, tool handles and all articles which are improved by decorating or trademarking.

This process utilizes a hot stamping press, a heated steel or brass die (or type) and a roll of stamping foil. The article to be stamped is placed under the head of a stamping press containing a heated brass die. A roll of stamping foil is carried across the face of the die. With each operation of the press the die is impressed into the surface of the material being stamped. At the same time the impression is made the pigment is transferred from the stamping foil carrier to the material. The impression and the transfer of the pigment are done in the same operation. The operation is really an embossing and imprinting operation in one.

In the case of box tops and box wraps which are embossed by the roll leaf method, the embossing operation is performed after all the printing has been done. The work is usually done on a platen press of the Thomson-National, Chandler & Price or Brantjen and Kluge type, which is equipped with a roll leaf feeding attachment and a heating plate. A brass die is made for the part of the design to be embossed in roll leaf. This die is a combination stamping and embossing die, designed so that it not only causes the foil to release but also embosses the surface to which it is applied, all in one press operation. The roll of gold bronze or colored foil passes across the face of this heated brass die. With each operation of the press, the foil is transferred from the paper web to the box wrap surface.

The roll leaf process is unique in that it eliminates entirely the operations of sizing and bronzing. In one operation, it applies the foil and embosses the design into the surface of the paper.

The marking or decorating of plastic articles offers still another problem, because of the nature of the material being stamped. Special presses have been developed for this purpose and the use of steel dies and high pressures allows the stamping of very hard materials with satisfactory results. This roll leaf process has also been applied for stamping plastic closures.

One of the largest fields of application of the Peerless process is in the stamping of articles made of wood. Tool handles, for instance, lend themselves admirably to this process. Flat surfaces offer no difficulty and the originators of this process have developed special equipment for stamping curved and cylindrical surfaces.

The wide range of colors available makes it possible to use almost any color combination. There are pigment and metallic colors as well as gold and silver. The cost of the stamping foil is low, about one cent for thirty to forty square inches, which makes it easy to estimate the cost of material for a particular job. The stamping foil is available in any width up to 24 in. and is supplied in rolls 200 ft. long. Steel or brass dies are relatively inexpensive and good for many hundreds of thousands of impressions.

In the operation of the various stamping presses, there are several outstanding advantages. The operation of the press does not require any particular skill on the part of the operator. Automatic feeds can be arranged which bring the article to the press and eject the finished and stamped article as desired. There is no drying time required and the finished articles can be packed for shipment immediately after they leave the press.



Left to right: Roll leaf stamping as used on bottle label, set-up box and molded acetate powder container. Photos courtesy of the Peerless Roll Leaf Co., Inc.

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MARKEM PRINTING EQUIPMENT

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MODEL BP

Prints entire label or fills in variables. Motor integral with machine. Provides economical method of printing on telescopic box ends, flat cartons, and labels, supplying them as needed thus eliminating inventory problem of printed boxes.

MODEL L

Heavy duty construction. Eliminates labels and label pasting expense by printing entire design and variable information on box end. Individual cut out device on double head equipment permits each printing head to be operated independently of the other. Machine also supplied with single printing head if desired.

MODEL KD

This equipment is widely used for filling in variable detail on telescopic, shell lid and set up boxes, also loose labels and labels attached to boxes. Patented type head allows quick change of insertable type.

MODEL 105

Compound Gear Drive produces heavy pressure enabling high class printing of descriptive matter on boxes and labels. If desired for single line printing, machine may be equipped with rotable type wheels to facilitate quick change of variable information.

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MODEL PLA

For application of printed trademarks and other variable details on plastic surfaces, also available for glass and metal surfaces. New high speed air drying printing compounds produce efficient results without stoving. High adhesion of imprint obtained.

MODEL 125

This machine feeds a blank roll of paper, gummed or ungummed, or a roll of fabric such as silk, cotton, etc., to the type head, automatically prints, counts, perforates and rewinds into compact roll of labels for immediate use or for stock. Equipment will also feed, print, cut off and stack paper labels at the rate of approximately 125 per minute.

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- Automatic Printing Machines
- Numbering Machines
- Boxboard Printing Machines
- Roll Leaf Stamping Machines
- Transparent Cellulose Printing Presses
- Roll Leaf (Stamping Foil)
- Glassine Inks
- Transparent Cellulose Inks
- Gummed Papers
- Tag Printing Machines
- Glass Printing Machines
- Plastic Printing Machines
- Tape Printing Machines
- Fabric Printing Machines
- Bag Printing Machines
- Carton Printing Machines
- Printing Inks
- Ticket Printing Machines
- Label Printing Machines
- Brass Engraved Type

MARKEM MACHINE CO.

KEENE NEW HAMPSHIRE

Transparent Surface Coatings

A number of materials are at present coming into increasingly wider use as surface coatings for paper labels, wraps, cartons, etc. These fall into two general groupings known to the layman as lacquers and varnishes. Within each group, however, there are a number of types of material available and new materials, such as rubber derivatives, are hard to classify under either grouping.

The original function for which these materials were developed and applied to packaging was to provide a high gloss finish which would insure greater eye appeal for the package. While this is still an extremely important function in many instances, a number of other functions are met by this group of materials. These include the following:

1. Resistance to dirt and to oil and grease stains, fingerprints, etc.
2. Moisture resistance. Lacquers in particular can be so formulated as to seal paper and hard surface cardboard against the penetration of moisture from without or against evaporation from within.
3. Scuff-proofness. Both lacquers and varnishes provide varying degrees of resistance to chafing, scratching and scuffing and hence preserve the original appearance during transit.
4. Bleed resistance. Spirit label varnishes and lacquers prevent moisture derived from the outside or from the interior of the package from causing bleeding of printing or lithography.
5. Alkali resistance. Lacquers in particular are unaffected by mild alkalis and therefore find special application in the packaging of some alkali products. This quality also permits wiping or washing of lacquered packages.

Formulation of Surface Coatings

While a certain degree of standardization in such coatings has taken place, practically all types of lacquers and varnishes should be formulated by the supplier only after a careful study of all of the factors entering into the application and use of the material. Suppliers are prepared to render a great technical aid in this respect and to advise not only on the proper formulation of the lacquer or varnish, but also on the selection of papers, applications, processes, inks, etc.

Spirit Varnishes

Spirit label varnishes are alcohol solutions, usually of manila gum, which dry by the evaporation of the solvent. Other materials are sometimes added. Although basically simple, their exact formulation, processing and application have considerable bearing upon the quality of the coating obtained, its transparency and the amount of gloss. They are applied by running the printed sheets through a varnishing machine where the varnish is rolled over the sheet and dried quickly by passing through an oven. They then continue on a belt for an additional cooling distance before stacking.

Spirit varnish gives a clean, smooth finish over most grades of paper. Under ideal conditions, it is the most brilliant finish available. Care should be taken, particularly during the drying process, to avoid oxidation factors resulting in the presence of objectionable odors. Care must be exercised not to use inks soluble in alcohol on sheets which are to be spirit varnished.

Overprint Varnishes

Overprint varnishes are coming into wider use in the packaging fields. A major advantage they possess is that they may be run on either lithographic presses or letter press equipment. They are clear and transparent, giving an excellent gloss effect over dry ink. Any design required may be printed with varnish so that the paste flaps may be left free of both ink and varnish, a very important advantage for folding boxes and wraps.

Overprint varnish gives a tough, slippery film, a high gloss which is resistant to chafing and scratching and to most other destructive agents. Consisting of an oil base plus resins, wax and driers, it dries through oxidation and hence requires a considerably longer drying time than spirit varnishes.

Lacquers

Lacquer, made of cellulose compounds and suitable solvents, is usually applied in much the same manner as spirit varnish. In some cases, it is sprayed rather than rolled on. It dries by evaporation of the solvents.

Lacquering is usually a more expensive process than varnishing, both because of the deposited lacquer and because a heavier film is usually applied. While such broad differences in cost would seem to rule out lacquers for most purposes, this is not, in actual practice, the case. The provision of such qualities as moisture resistance, alkali resistance and grease resistance and the higher resistance which lacquers provide to scratching, chafing and rough treatment frequently makes their use desirable and in a number of instances has permitted of economies on other portions of the package more than compensating for the actual cost of the lacquers.

Thus in some instances, companies formerly utilizing friction sealed metal cans to keep products dry have found it possible to use less expensive paper walled canisters in conjunction with lacquer coated labels.

Lacquers, above all other coated compounds, require the most careful formulation and the most thorough knowledge of conditions to be met in production, processing and use if they are to provide desired qualities.

Lacquer coatings are clearer and brighter and do not discolor white areas as compared with varnishes. Their discoloration with age is very much less than that experienced with varnishes.

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ROCKEFELLER CENTER, NEW YORK
THIS INSERT IS TREATED WITH ONE COAT OF EGYPTIAN CLEAR GLOSSY LACQUER

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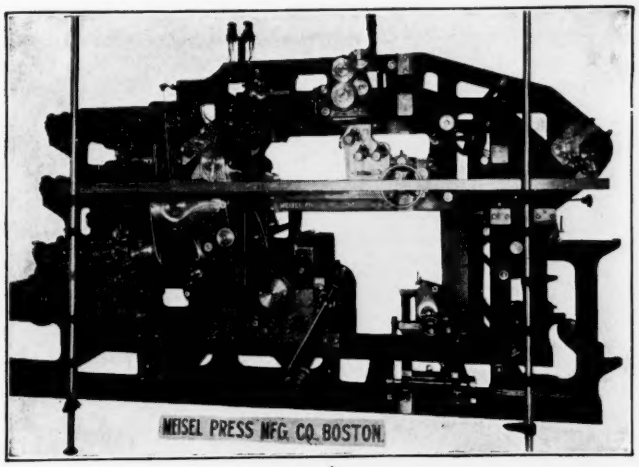
MEISEL PRESSES

ROTARY BED & PLATEN

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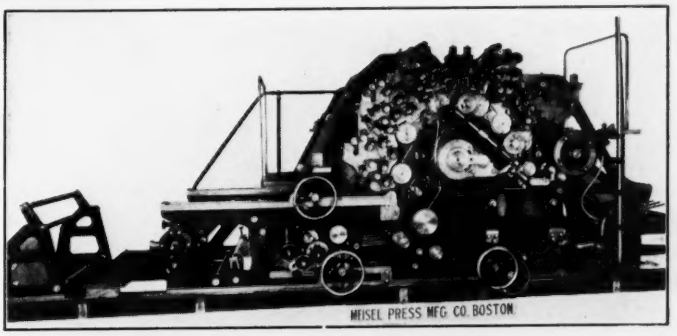
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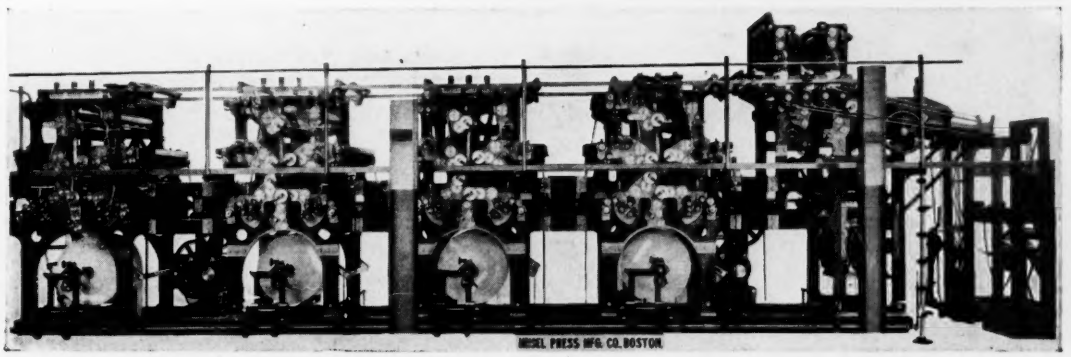


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Rubber Derivative Coatings

In the last two or three years, coatings based upon rubber derivatives have achieved increasing usage because of their moisture-vaporproof qualities.

Two types of such coatings are available—one, applied as a solution by a standard coating procedure, provides a highly moistureproof, strongly heat sealing transparent and glossy coating. The other, compounded with wax and applied as a hot melt coating, is utilized where transparency is not a major factor and where some degree of gloss and heat seal strength can be sacrificed.

Vinyl Resins for Coating Surfaces

by A. K. DOOLITTLE AND J. R. PRICE*

Vinyl resins, although relative newcomers among the synthetic resinous materials, have already found a place in the food and beverage packaging field, due to the unique properties which they possess that especially adapt them for food package use. These properties include moisture-, grease- and alcohol-resistance; thermoplasticity; non-inflammability; and absence of taste, color or odor. With co-polymer vinyl, terms such as "resistant to alcohol," "impervious to moisture" and "greaseproof" are more than merely relative terms—they are practically absolute. For example, a co-polymer vinyl resin film is not softened at all on immersion in spirits grade alcohol at 25 deg. C. Moisture transmission at 35 deg. C. is less than one-tenth as great through a vinyl film as it is through a nitrocellulose film and grease has no effect on co-polymer vinyl that can be detected by any of the ordinary methods of test.

Co-polymer vinyl resin is the term used to describe the vinyl resins manufactured by the co-polymerization of vinyl chloride and vinyl acetate. The resin molecules prepared in this way consist of both individual vinyl chloride and individual vinyl acetate molecules joined together in chemical combination. In no sense can the properties of co-polymer vinyl be duplicated by mixing separately polymerized polyvinyl acetate with separately polymerized polyvinyl chloride. The mixture of the two components must take place, step by step, as the large molecules are built up in manufacture. The intermediate materials, vinyl chloride and vinyl acetate, from which co-polymer vinyl is produced, are themselves made synthetically from naturally occurring raw materials such as gas, air and salt.

The vinyl chloride portion of the co-polymer vinyl molecule contributes resistance and toughness, while the vinyl acetate portion permits the resin to be dissolved by the proper solvents and likewise accounts for a certain "internal plasticity" that is very characteristic of these resins. Since no oxidation or other chemical change takes place when vinyl lacquers dry, this film flexibility is retained practically indefinitely.

Co-polymer vinyl is a hard, tough, colorless and transparent resin. It is soluble in several classes of organic solvents, including ketones, esters, and certain chlorinated compounds. These solutions can be greatly diluted with aromatic hydrocarbons such as toluene and xylene, but will not tolerate much aliphatic hydrocarbon (petroleum naphtha). Films made of co-polymer vinyl are resistant to so many agencies that are destructive to the usual surface coating vehicles that they are practically without an equal in this respect. One might say that co-polymer vinyl is as resistant, physically and chemically, as Bakelite plastics, as tough as nitrocellulose, as flexible as a modified alkyd, yet colorless, odorless, tasteless and non-toxic. Little wonder that properties such as these should recommend this resin for use in the food packaging field.

Coating Techniques

The materials of which food packages are constructed are many and varied, but two broad classifications might be, namely, metal, such as is used in tin cans, metal foil and closures; and paper or fibrous materials, such as wraps, cartons, pulp and fibre containers, and the like.

Two general methods of applications are in commercial use for coating paper with co-polymer vinyl, namely, solution coating and calender coating. For coating metal, however, the solution coating method is the only practical means so far devised. There are several ways in which the solution coating of paper or of metal may be carried out. For instance, the sheet may be knife coated from a viscous solution; it may be roll coated by either the "wet roll" method or by the "off set roll" method; or, finally, the sheet, or preferably the fabricated container, may be sprayed with, or dipped in, a vinyl lacquer.

In all cases where the vinyl film is deposited from solution, it is necessary to "force dry" or bake the coated stock in order to rid the film of the last trace of the solvents. Co-polymer vinyl is not a heat-hardening resin. Vinyl lacquers dry in the same manner and by the same means as pyroxylin lacquers, but the tendency of the resin to retain residual solvent is greater than is the case with nitrocellulose. For film thicknesses such as are used in connection with the packaging industry, a few

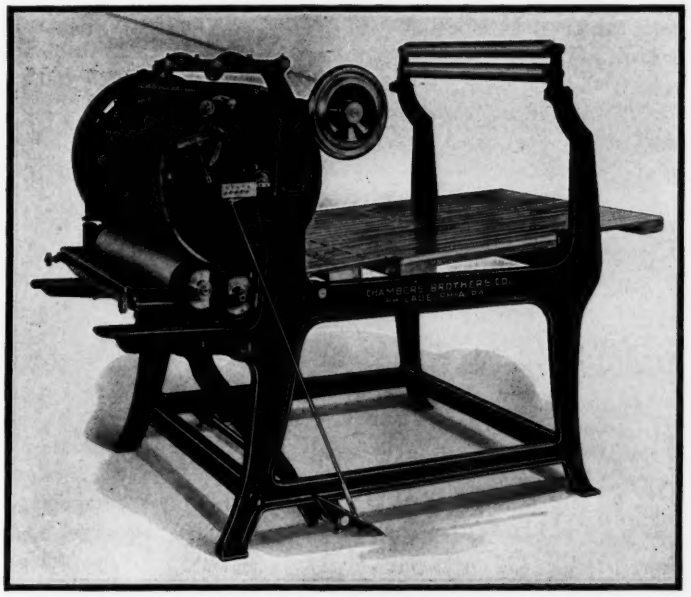
* Plastics Division, Carbide & Carbon Chemicals Corp.

CHAMBERS BROTHERS CO., Philadelphia, Pa.

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The roller method for applying fluid coatings as used in the Chambers Machine has long been recognized for producing satisfactory results. This machine is the standard in its field and is largely used by finishers conveniently located. Some of these firms have several machines in operation and are equipped to give very prompt service.



Of the Standard Model with cylinder 24 inches diameter, we have patterns for eight widths: 28, 36, 44, 52, 60, 65, 70 and 74 inches.

THE JUNIOR, with cylinder 14 inches diameter, receives sheet 12 x 20 inches. Changes in construction are cheerfully considered when necessary for special uses. Rubber covered rollers for spirit varnish. A composition covering is recommended for nitrocellulose lacquer. Tubular metal rollers, of a bronze alloy, are also used to apply some coverings. These are carefully ground and polished, then plated with a hard chromium. The ductor roller for all machines may be chromium plated at extra cost.

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minutes at 250 to 300 deg F. is usually sufficient, except in those cases where adhesion to metal is required. To gain adequate adhesion to metal with the current grades of co-polymer vinyl, it is usually necessary to attain a baking temperature of 350 deg. F. In such cases, a specially "stabilized" first coater is required to avoid decomposing the resin during exposure to this heat.

The calender coating of paper is accomplished by working the plastic mass into a thin film over heated rolls, then calendering this film continuously onto paper which is fed through the machine at the same rate as the film is formed. Film thicknesses as low as two mils are readily prepared by the calendering method just described.

Applications

The lining of tin cans for packaging beer was never successfully accomplished until vinyl resin became available. At the present time this field represents a major outlet for co-polymer vinyl resins. Aluminum foil, such as is used for cheese wrappers, is protected by a thin clear coating of co-polymer vinyl, while numerous articles fabricated from foil, such as catsup caps and liquor bottle closures, owe their exceptional resistance to the film of vinyl resin deposited on the surface.

Vinyl calender coated paper is widely used as liner material in closures for many food products, such as pickles, mayonnaise, cordials and beverages. The larger field of wrapping paper for perishable foods is just now awakening to the advantages of vinyl coated paper, but for these outlets solution coating seems to have some merit in preference to calender coating, since it is possible to apply a thinner film by the former method.

The thermoplastic nature of co-polymer vinyl is often utilized in the packaging field, where heat sealing is desirable. Two sheets of paper, for example, will be permanently bonded together if a thin film of vinyl is laid between them and the sheets lightly pressed for an instant between platens maintained at approximately 300 deg. F. Of course, this film could be a surface coating deposited from solution on one of the sheets.

The bonding action made possible by heat and pressure is not restricted to sealing two sheets of paper. A very large commercial application in the food packaging field, for example, makes use of the heat sealing feature of vinyl to bond adjoining folds into a strong container.

A very interesting application of vinyl to paper that is indirectly related to the food packaging field is the production of coated labels that are resistant to water, alcohol, alkali, oil and grease. Such labels are usually solution coated by the roll coating process and some very beautiful work is at present being offered commercially.

In the field of larger containers, one might mention linings for shortening barrels, beer barrels and Coca Cola and Pepsi-Cola syrup pails. Even larger containers, such as tank trucks or tank cars, could easily be lined with co-polymer vinyl coatings, but no commercial applications of this sort have been attempted thus far.

Specifying Vinyl Coatings

The preparation of vinyl surface coatings is carried on by a number of established lacquer houses who are in a position to offer their customers great aid in the preparation of solutions, the balancing of thinners, plasticization and pigmentation. The technique of adapting the formulation of the lacquer to the specialized requirements of each job has been carefully developed by these houses who are in a position to aid the ultimate users of vinyl lacquer immeasurably, provided they are supplied with the necessary information as to operating conditions and job requirements.

New Developments

It was stated above that two methods of applying vinyl surface coatings (solution coating and calendering) were in commercial use. A third method is rapidly approaching the status of commercial adoption and offers certain advantages, particularly in the coating of pulp and paper. This new development has to do with vinyl emulsions. Those who have worked with emulsions of co-polymer vinyl find these dispersions much more stable than emulsions of nitrocellulose or of alkyd resins. The absolute water insolubility of co-polymer vinyl may contribute to this stability, since water does not even wet this resin.

Vinyl emulsions are useful in the application of coatings on the surface of porous materials with a minimum consumption of resin per unit of surface covered. This is possible because the water strikes into the porous surface first and thus prevents penetration of the lacquer phase. The lacquer droplets therefore coalesce on the surface to form a continuous protecting film, while the water evaporates from the other side of the surface. This method of applying a surface coating appears particularly promising when used in conjunction with pulp containers such as cake boxes, milk cartons, etc.

Another feature peculiar to emulsions is the ease with which high solids can be reached at low viscosity. An emulsion is a suspension of finely divided droplets of lacquer in water. Thus, the viscosity of the emulsion is not determined by the viscosity of the lacquer itself, but is dependent on such things as proportion of water or continuous phase, size of the lacquer droplets, nature of the emulsifying agent, etc. Thus a very concentrated lacquer phase may be emulsified with water in the proportion of approximately 75 parts of lacquer to 25 parts of water, and yet produce an emulsion of low viscosity. A very slight additional thinning with water will reduce the viscosity to nearly that of water itself.

In addition to the development of water emulsions of co-polymer vinyl which are now on the threshold of commercial availability, several other new developments are in progress that are of particular interest in connection with the impregnation of paper, textiles and fibrous materials of many kinds. Such an ideal as a moisture- and grease-proof, odorless and tasteless wrapping paper of high wet strength may yet prove to be a reality.

XUM

Take a Look at LAMCOTE

Window Packaqes and Displays



A Lamcote Sales . . "BRACER"

Paris Garter Company brings suspenders out in full brilliant view with this Lamcote "Window" Package. Customers see the product through the transparent cellulose window — feel and handle it without soiling either product or package.

A Lamcote Sales . . . "LIFESAVER"

Rit's Problem: How to add long life to their much-handled sample board, guard and retain the true colors of dye swatches from which customers choose their shades?

The answer: Lamcote Display Sample Board. Printed face sheet with twenty-nine die-cut holes, entire surface lamcoted creating twenty-nine transparent windows, and mounted over board on which dye swatches are already affixed in position behind windows. The dyed swatches now stay bright and clean, in their true colors. The entire card is beautified by enduring, brilliant Lamcote.

A Lamcote Sales . . . "DRIVER"

Marshall Field & Company put their Field-Flight golf ball out into the open with this Lamcote tray-box. Through its lamcoted aperture of transparent cellulose, the customer sees the product without opening the box, feels and handles the package without soiling; leaves it fresh and new for each prospective customer — a glossy, sparkling "driver of sales!" The package is of such sturdy construction that it can be placed inside the bag, permitting the balls to be removed one at a time, each as "factory-fresh" as the day it was packed.

WILL YOU TAKE A LOOK AT LAMCOTE?

Write us — We'll Gladly Send a Generous Supply of Samples with Complete Information

ARVEY CORPORATION

WORLD'S LARGEST MOUNTERS AND FINISHERS OF CARDBOARD ADVERTISING DISPLAYS

3462 NORTH KIMBALL AVENUE ● CHICAGO, ILLINOIS

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SHIPPING

SECTION TWELVE

Pages 445 to 478

CORRUGATED AND SOLID-FIBRE CASES

SHIPMENT OF FIBRE CONTAINERS

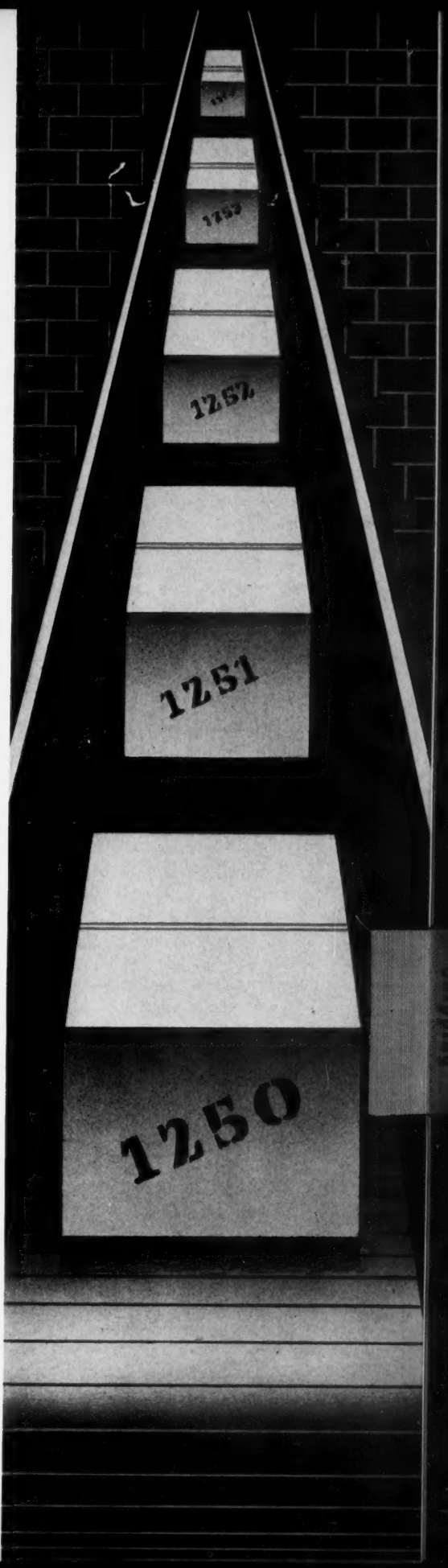
STEEL STRAPPING SHIPMENTS

WIRE STITCHING CONTAINERS

WOODEN SHIPPING BOXES

PROTECTIVE PADDINGS AND CUSHIONS

TAPE SEALING SHIPMENTS



XUM

Corrugated and Solid-Fibre Cases

by J. D. MALCOLMSON*

A fibre shipping container is a tough, efficient and economical outer package built to withstand the wear and tear of freight, express and parcel post shipment. It is used for shipping all manner of commodities up to a weight limit of ninety pounds. There are two types of these boxes—the laminated walled "solid fibre" box and the cellular "double faced corrugated" box.

The fibre container affords a satisfactory means for shipping fragile articles, as well as heavy commodities of relatively small size. Liquids in glass, for instance, are moved in these boxes with a minimum of breakage. The bottles are usually packed in cells formed by partitions of corrugated fibreboard. Another method of packing which is in greater demand is the "unit carton" system. Articles such as electric irons, lamp fixtures, etc., are placed in an individual carton, which also contains the necessary accessories. A certain number of these cartons, say, two dozen, are then shipped in a container, so designed that the contents exactly fill the box.

The advantages which are claimed for the use of fibre containers are as follows:

First cost: Due to the use of high strength, but light weight materials and efficient manufacture with high speed machinery, their first cost is relatively low.

Weight: Tare weights are relatively low, resulting in freight savings on shipments as well as on incoming supplies of boxes.

Convenience: The absence of nails and splinters prevents injury to hands or clothing in packing and invites freight handlers to lay aside their hooks. Its relatively small size, which is controlled by railroad requirements, makes for easy handling in shipment and storage. It is often used as a shelf package and as a unit package for delivery to the consumer without re-packing.

* Director of Research, Robert Gair Co., Inc.

Storage: Fibre containers are delivered flat and are stored in a minimum of space.

Concealed theft: Minimized as the case, when properly sealed, must be practically destroyed to open.

Sealing: Very economical, due to the development of automatic sealing machines described elsewhere.

Advertising: Being a paper product, these cases are susceptible to high grade printing in one or more colors.

Sanitary features: These cases are used new and seldom re-used. Paper linings are not necessary.

Stacking: These boxes, due to the combination of light weight and rigid walls, can be stacked to the roof of most warehouses.

Nomenclature

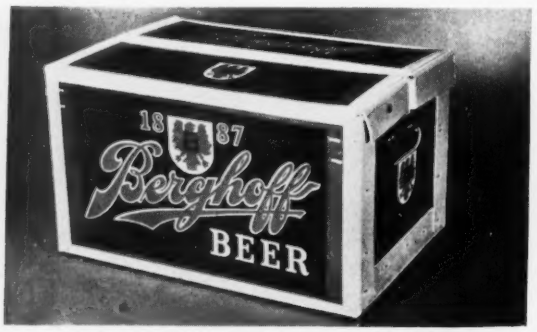
Fibre containers: The general term which includes both corrugated and solid fibre cases. The words "fibre" or "fibre boxes" are often used to designate solid fibre boxes, but this is open to misconstruction.

Corrugated fibre containers: Usually simply "corrugated cases," generally indicates boxes made of single strength, double faced corrugated board.

Corrugated board: A general term and may mean any of the grades named below.

Unlined corrugated: Corrugated paper alone with no "liners" or "facings." It is usually made of 0.009 in. straw but sometimes is 0.009 in. chip and unless otherwise specified, is the usual or large corrugation, $^{3}/_{16}$ in. in height. It is used as wrapping material for lamp chimneys, etc., and has the disadvantage of stretching and thus losing the cushion value of the corrugations. It usually comes in rolls.

Single-faced board: Has one liner which may be of straw, chip or jute and usually either 0.009 in., 0.012 in.



1. Multi-color printed beer case of stitched fibre construction with stitched flaps and die-cut handle holes. A multi-trip fibre container. Courtesy Container Corporation of America.



2. Corrugated shipper-package attractively decorated for use on display. Such unit shipping packages offer obvious economies. Courtesy The Hinde & Dauch Paper Co.

XUM

or 0.016 in. thick. It is used for inner packing and wrapping and is usually sold in rolls 36 in. wide, 250 ft. long, weighing from 60 to 75 lbs.

Double-faced board: Double lined corrugated, is made with two liners of straw, chip, jute or kraft and is described by the railroads as "single strength." It may be test or non-test board and cannot be rolled.

Double-strength board: Often spoken of as "double double" and "double walled," but the term "double strength" is preferable, as this is the designation used by the railroads. It is a combination of double face and single face, having three liners and two corrugations and is from $^3/_8$ in. to $^1/_4$ in. thick.

Straw paper, or strawboard: Used for corrugations, is 100 per cent wheat straw, although rye, oat and rice straws are occasionally used. Strawboard is sometimes imported from Europe, usually from Holland. It is generally made 0.009 in. thick, for corrugating, although 0.012 in. or heavier is sometimes used for this purpose. Chestnut waste, sulphate, sulphite and pine wood fibreboard is also permitted by the railroads for corrugations.

Chip, or chip board: Made from mixed waste papers and is usually 0.009 in., 0.012 in. or 0.016 in. thick. Corrugated board with chip liners is usually used for interior packing.

News, or news board: Made of newspapers and is sometimes used in place of chip, though more expensive. The other grades of boxboard do not enter, to any great extent, in the making of shipping containers.

Liners: The facings of single-face, double-face or double-strength corrugated board. They may be 0.009 in., 0.012 in. or 0.016 in. chip or 0.016 in., 0.018 in., 0.023 in. or 0.030 in. jute or kraft. Solid fibre liners are usually 0.016 in. jute or kraft. "Liner" is also used to describe the interior packing sheet which lines the four sides of a case and which is usually made of double-faced chip or straw corrugated board.

Jute: Really a misnomer, as jute is no longer used in this industry. A "jute" liner is a mixture of new kraft or sulphate fibres and high grade mixed papers.

Filled kraft liners: These are kraft liners with a small proportion of waste paper or groundwood added.

All-kraft liners: These contain no mixed papers but are usually made manufactured as 100 per cent sulphate kraft. They are among the new developments that are to be found.

Solid fibre: A laminated board built by gluing several plies of board together with silicate of soda or vegetable adhesive and is often referred to as "fibre" or "fibreboard." (See *Fibre Containers.*) The two outer plies are made of jute or kraft. Solid fibre is usually made in 0.060 in., 0.080 in. and 0.100 in. thicknesses as called for in the Classification, but some 0.090 in. and 0.120 in. board are occasionally used in the making of shipping containers.

Single-lined solid fibre: This is not often used for shipping containers but is applicable where only a single bender is required and permitted.



3



4

3. Shipper-display for kit of toy parts. End and side flaps fold over to disclose display imprints. Corrugated dividers position parts. Courtesy Robert Gair Co., Inc. **4.** Two color printing in attractive design converts this ordinary corrugated shipper into a traveling advertising billboard. Photo courtesy of the Inland Container Corp.

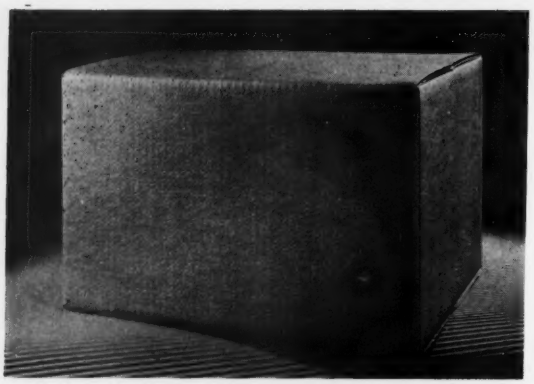
Test and non-test board: In this industry this usually applies to board that does or does not comply with the railroad requirements on bursting strength.

Express stock: The correct name of this corrugated board is *jute and chip* which describes its construction. At one time this was acceptable for express shipments. The express rules are now essentially the same as the freight rules except that for most items of less than 35 lbs., jute and chip may still be used.

Mullen or Cady test: These two instruments register the bursting strength of a board, presumably in terms of pounds per square inch. Actually the results are not exactly in these proportions and for this reason many people refer to the figures as Mullen "points" or "units." Both of these instruments are official as shown in and established by Rule 41.

Webb tester: This instrument overcomes many of the objections to the Mullen and Cady test by testing the liners of double face corrugated board separately, but it is not recognized as official by the railroads.

Rule 41: That part of the Official Classification which itemizes the specifications for corrugated and fibre shipping containers when used for freight shipments.



5



6

5. Corrugated shipper with new pebble grain kraft paper finish designed to enhance display appeal. Courtesy The Hinde & Dauch Paper Co. **6.** Printed corrugated protective sleeve for asphalt shingles. Bundle is bound with wire. Courtesy Container Corporation of America.

Rule 18: This does the same for express shipments in the Official Express Classification.

The Bureau of Explosives: Issues a handbook containing express and freight container specifications for dangerous articles.

Freight Container Bureau: Issues the official specifications for freight shipment of fresh fruits and vegetables.

Food Administration Specifications: These are the same as the so-called *National Canners Association Specifications* and specify higher test corrugated and solid fibre cases for canned goods than are required by the railroads. They are regarded as being unofficial.

Certificate of box maker: This is sometimes known as the "imprint" or "class stamp." It defines the bursting strength of the container and weight and dimension limit, as well as identifying the box maker.

The following list is not complete but covers the most important styles of boxes:

Regular slotted carton (RSC): Most containers, especially for freight shipments, are made in this style because of the economy of using a straight cut blank. All flaps are the same length and the inner flaps do not meet unless the length and width are of the same dimension.

Silicate of soda: This is an adhesive sometimes used for sealing containers and also used in the manufacture of corrugated and solid fibreboard. Another name is *water glass* and it is referred to as "silicate."

Point: In this industry a "point" is one thousandth of an inch; 0.060 in. board is always referred to as "sixty point" board.

Height, depth: These synonymous words indicate the distance between the openings of a box, i.e., from top to bottom. "Height" is preferable as in some industries "depth" means from front to rear. The height of a slotted carton is always understood to refer to the last dimension.

Girth: Used in the Parcel Post specifications as the distance around the parcel at its thickest part.

Length: In P. O. specifications is the greatest distance in a straight line between two ends.

Nests, or partitions: These usually consist of vertical divider pads, criss-crossed and slotted half of their height so that they interlock to form individual cells to receive the product. A divider is a vertical pad which has no slots.

Star-cut pad: This corrugated pad has radiating die cuts and is used to separate large glass objects, such as bowls and illuminating glassware. It is also known by such descriptive and imaginative terms as "rat-trap pad" and "pie-cut pad."

Die-cut work: Made on a special press and the initial cost of the die and extra make-ready must be allowed for. The ordinary fibre box equipment works in straight lines, at right angles, so that other unusual work is made on a separate cutting and creasing press.

Crease and score: Used interchangeably but "Crease" is preferable as "Score" may mean a knife cut, as it does in the set-up box industry. Such a cut score is not used in the fibre container industry.

Joint and seam: The railroads define "joint" as the result of the operation done by the box maker in taping or stitching the fourth corner of the box; and "seam" as the juncture that is closed by tape in sealing.

Bales and bundles: This refers to Section 4 (*c*) of Rule 5 and means that items accepted under this category may be shipped in corrugated or solid fibre containers *without* restrictions as to weight or dimensions.

Printing plates: Solid fibre is printed from brass plates or electrotypes. Corrugated board is printed from rubber plates which are cast from type or prepared in the usual way from a wood cut.

Patented Types of Fibre Containers

Almost an endless number of unusual boxes have been patented, advertised and finally forgotten. Most of these are either impracticable or too expensive for the purpose intended. Those now in the limelight are:

Reinforced-score box: A corrugated container with a strip of tape glued over the score-line, either on the inner liner or inside the board. Three different companies have patents on variations of this idea.

Reinforced-tape joint: The ends of the tape on the manufacturer's joint is split and tucked under at each end of the joint.

XUM



ACME STEEL COMPANY

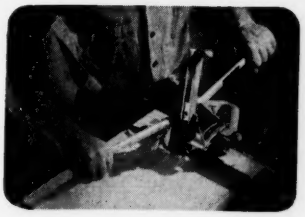
General Offices: 2834 Archer Avenue, Chicago

103 Park Avenue, New York City
114 S. Alaskan Way, Seattle
603 Stewart Ave., S.W., Atlanta
432 Bryant St., San Francisco
1936 East 15th St., Los Angeles
848 Cambie St., Vancouver, B.C.
National Cartage Warehouse, Winnipeg, Man.
369 St. Paul St. W., Montreal
32 Front St. W., Toronto, Ont.



Manufacturers of ACME Steelstrap and Strapping Equipment for Package Reinforcing. ACME Silverstitch, galvanized, and Colorstitch, in colors; stitching wire for fibre cartons. ACME Flat-Top and Open-Mesh, stainless and galvanized Conveyor Belts. ACME Heavy-Duty Floorsteel for floor armoring.

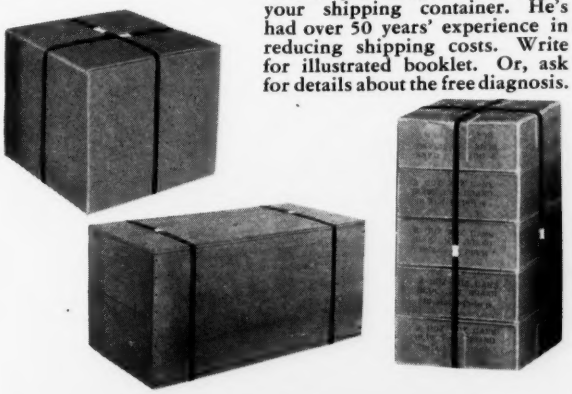
Acme Steelstrap



For all kinds of shipping packages—cartons, boxes (wooden or fibre), crates, bundles, skids. Acme Steelstrap provides a stronger, safer container yet reduces shipping and handling costs—savings from 10% to 40% are not uncommon. Important labor, material and time reductions are made possible. Acme Steelstrap is being used successfully by thousands of concerns in shipping virtually every type of product.

Small packages can be bound into one unit, with Acme Steelstrap, thus securing a more economical express classification. Large units reinforced with Acme Steelstrap may be shipped in lighter weight containers for additional economies.

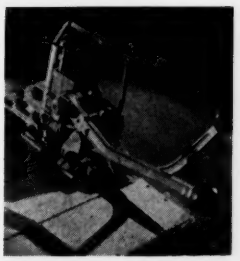
No matter what you make or how you ship it, the chances are ten to one that Acme Steelstrap can save money for you. Let Doc. Steelstrap make a *free* diagnosis of your shipping container. He's had over 50 years' experience in reducing shipping costs. Write for illustrated booklet. Or, ask for details about the free diagnosis.



Acme Steelstrapper

The *new* Acme No. 2 Steelstrapper is the latest addition to the only complete line of strapping equipment which *combines* the tensioning, sealing and cutting operations with an automatic seal feed. Made to eliminate lost motion, this new Steel-strapper is built for speedy application to heavy packs including skid loads.

There is an Acme tool for every need. Write for details about the money and time-saving Acme tool for *your* requirements.





The sealed joint of Acme Steelstrap has practically the same strength as the strap itself.

Acme SilverStitch

Reg. U. S. Pat. Off.



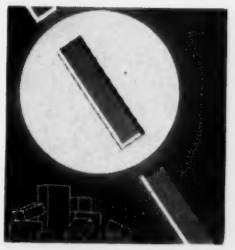
Stapling is faster—more boxes can be stitched per day, with the *one-piece* 5- and 10-lb. coils of Acme Silverstitch. There are fewer stops for coil changes. Economy and satisfactory results are assured by uniform temper, width and thickness.

Silverstitch is GALVANIZED by the Acme process which provides rust resistance, durability and attractive appearance. Write for *free* test coil. State size required.

Acme ColorStitch

Reg. U. S. Pat. Off.

Stitching wire in colors that blend or contrast with the printed carton gives added "*eye-appeal*" to cartons and boxes. The slight extra cost is more than offset by improved appearance. Write for sample color card.



SILVERSTITCH and COLORSTITCH are available in these sizes: .103 x .014, .103 x .107, .103 x .020, .103 x .023, .060 x .024 and .060 x .0205.

Acme STEELBELT for conveying materials

Acme Steelbelt is available in two types—Open Mesh and the new Flat-Top type—*Stainless Steel or Electro Galvanized Finish.* This new belt is sturdily constructed, flexible. It is made with pivot wires, completely protected from wear at any one point. The special self-locking feature assures safety. Furnished with or without openings which



Acme Open-Mesh Conveyor Belt in service in food plant

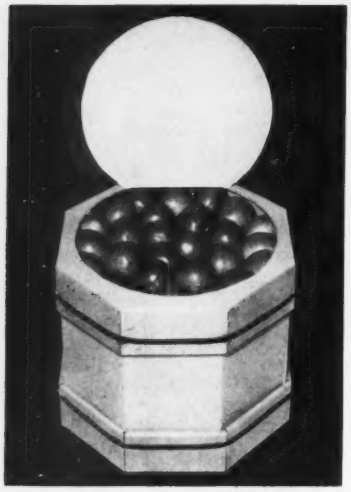


New Acme Flat-Top Conveyor Belting

are made to suit specific requirements for drainage and ventilation. No chance for stretching. Cleaning and repairing easily accomplished.

Acme Steelbelt of either type provides an efficient and economical means of conveying products through drying ovens, sorting and assembling, washing, etc. Available in sizes to fit practically any requirement. Write for complete details. State type of application.

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7. Newly developed octagonal apple shipper and display box. Three-piece construction. Courtesy Gaylord Container Corp.

Burlap-covered box: This is a corrugated box with an outer covering of burlap cemented on with asphalt. This box, because of its strength and moisture-proof qualities, is suitable for export use.

Recessed-end box: The ends of this solid fibre box, recessed, are strengthened by the stitched rim.

Bliss box: This type of fibre container consists of a three-piece box made of solid fibre or corrugated board. The blanks are joined by means of flanges stitched in place, which reinforce the corners and all vertical seams. It is claimed that the corners and vertical edges are the vital parts of the fibre box and that when reinforced by stitched flanges, the resulting box is much better fitted to withstand the shocks and strain of handling and of transit. The box is also more rigid and can be stacked higher without bulging.

Container Marking

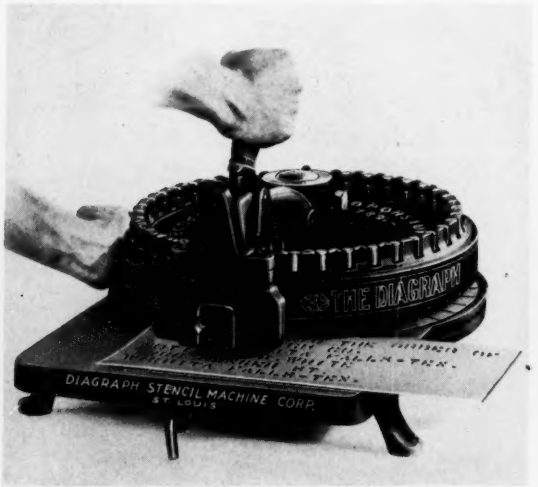
Shipping containers, particularly those of modern printed design, serve important functions in addition to those of mere transportation. It is of value, therefore, in insuring proper handling and in preserving the display and advertising value of the container to make certain that proper, legible and attractive addressings, code markings and datings appear on the container. Where these can be anticipated in advance, space can be allowed in the design for such factory-applied legends and thus these various markings need not mar the appearance of the container.

Code marking and dating equipment exists in a number of factories as an adjunct to the container sealing equipment, being installed as a part of the latter machinery. Other plants find it desirable to mark packages individually, rather than in "runs," and therefore use some variety of hand operated stenciling equipment. Addressing stencils are very widely used, being cut on machines of relatively low cost and retained almost indefinitely for re-use as needed. Such stencils are usually cut from oil-board and produce a far neater form of lettering and a far less expensive one than could be applied by most other available methods.

Stencils for dating, code number marking and similar purposes are frequently made of a more permanent material, such as sheet brass, as these tend to receive far harder and more frequent usage than the average single address stencil.

In considering stencil markings, particularly for export packages, Parcel Post shipments and Railway Express shipments, it is advisable to consult in advance with the proper shipping agencies who frequently impose restrictions as to minimum dimensions of lettering, phrasing, etc.





8. Numbering and dating stencils. Permanent fixtures made of sheet brass. 9. Stencil cutting machine with oil-board stencil in position below cutting die. Courtesy Diagraph-Bradley Stencil Machine Corp.

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YOU'VE HEARD ABOUT CORRUGATED PACKAGES THAT *sell merchandise*

NOW GET THIS 16-PAGE BOOK... SEE HOW YOUR PRODUCTS CAN BE PACKED MORE PROFITABLY

You Furnish The Product--We'll Furnish The Profit Package!

You make a good product. It has to be good in order to pass the critical eyes of store buyers. But what about your package? Does it attract the eyes of ultimate buyers? Does it advertise your product? Does it help display your product? Does it help SELL? Modern H & D Profit Packages do all of these things . . . for a great many successful merchandisers. Profit Packages are planned in the Packaging Laboratory of H & D, headquarters for modern design, fine color printing and box engineering. Let the Authority on Packaging help create a real Profit Package for your product. Send a letter — even a post card — for your free copy of the stimulating book, "PROFIT PACKAGES."

1 New Tapestry Pattern—An example of one of the exquisite stock patterns available to users of H & D Profit Packages.

2 Modern Design—Printed in Two Colors—Only two colors on this package, yet overprinted on the new over-all tapestry pattern they give the impression of three or more colors.

3 Unit Packaging—Here is a shelf package and delivery package, all in one. Packed 6 or 12 in a master shipping box. Reduces damage, saves time and labor for the retailer, wins customer good will.



Profit Packages Cost No More
In most cases, Profit Packages cost no more than ordinary containers. They prove daily their ability to earn extra profits.

THE HINDE & DAUCH PAPER CO.
Executive Offices: 3939 Decatur St., Sandusky, Ohio.

FACTORIES AND SALES OFFICES IN PRINCIPAL CITIES



PACK IT! SELL IT! IN H&D PROFIT PACKAGES

Use a Package That Helps Make a Sale

Shipment of Fibre Containers

by P. C. MEELFELD*

Corrugated and fibre shipping containers will provide the utmost protection, convenience and economy only when properly planned to meet probable conditions of use and handling and when properly piled in storage and loaded in shipping.

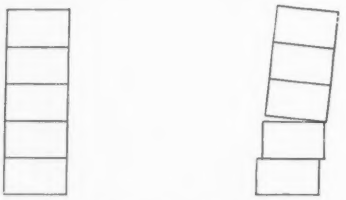
It is essential that shippers as well as box makers be familiar with the regulations. They are too voluminous to remember but one should at least know where to secure the authoritative data.

Consolidated Freight Classification No. 7, issued Aug. 5, 1932, effective Sept. 20, 1932, may be obtained for a nominal sum by writing to the Official Classification Committee, 143 Liberty St., New York, the Southern Classification Committee in Atlanta or the Western Classification Committee in Chicago.

Express regulations are governed by the Official Express Classification No. 31 issued in February, 1930, and since supplemented.

The Post Office rules for parcel post are not as definite as those for express and freight. Form No. 3841 recommends the use of corrugated boxes for a number of listed commodities but specifications other than "securely wrapped" are not given. The usual parcel post weight and dimension limits apply.

There are no uniform rules for fibre containers for overseas shipments. Each steamship line makes its own rules and the stringency of these depends somewhat on the intensity of competition at the time the rules are made.



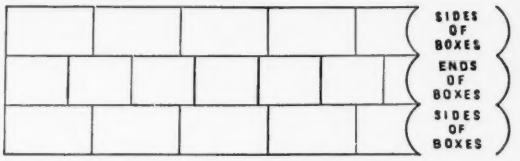
1. Care in keeping piles vertical will result in pressure being distributed over the top of the bottom box. Damage to bottom containers will thus be avoided.

How to Pile Shipping Boxes

Careless piling of fibre shipping boxes causes much damage due to crushing, sagging, tipping, sliding, friction and toppling of piles. Careless piling also destroys the attractive, orderly appearance of modern shipping boxes, thus robbing them of their advertising value.

All of these unhappy results can be avoided by using reasonable care and exercising the few simple rules for piling which follow.

* Advertising Manager, The Hinde & Dauch Paper Co.



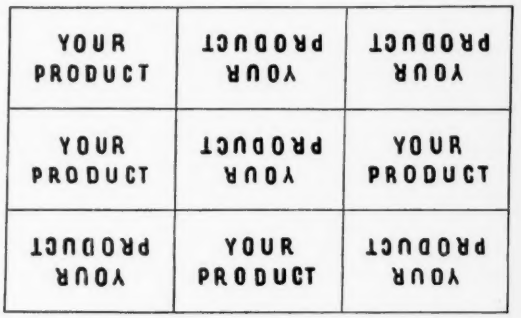
2. Boxes are interlocked into strong, self-tied units by placing one row endwise, the next row crosswise, and so on.

1. Pile on a level horizontal surface only. A sloping or bumpy floor should be leveled with flat boards before piling begins.

2. Keep piles *vertical*, not leaning or irregular at the sides of the stack.

3. Pile the boxes in each pile so that they *interlock* in a self-sustaining unit.

4. Keep printed sides and ends *right side up*, not only to protect the contents but also to display advertising message and contents markings to the best possible advantage.

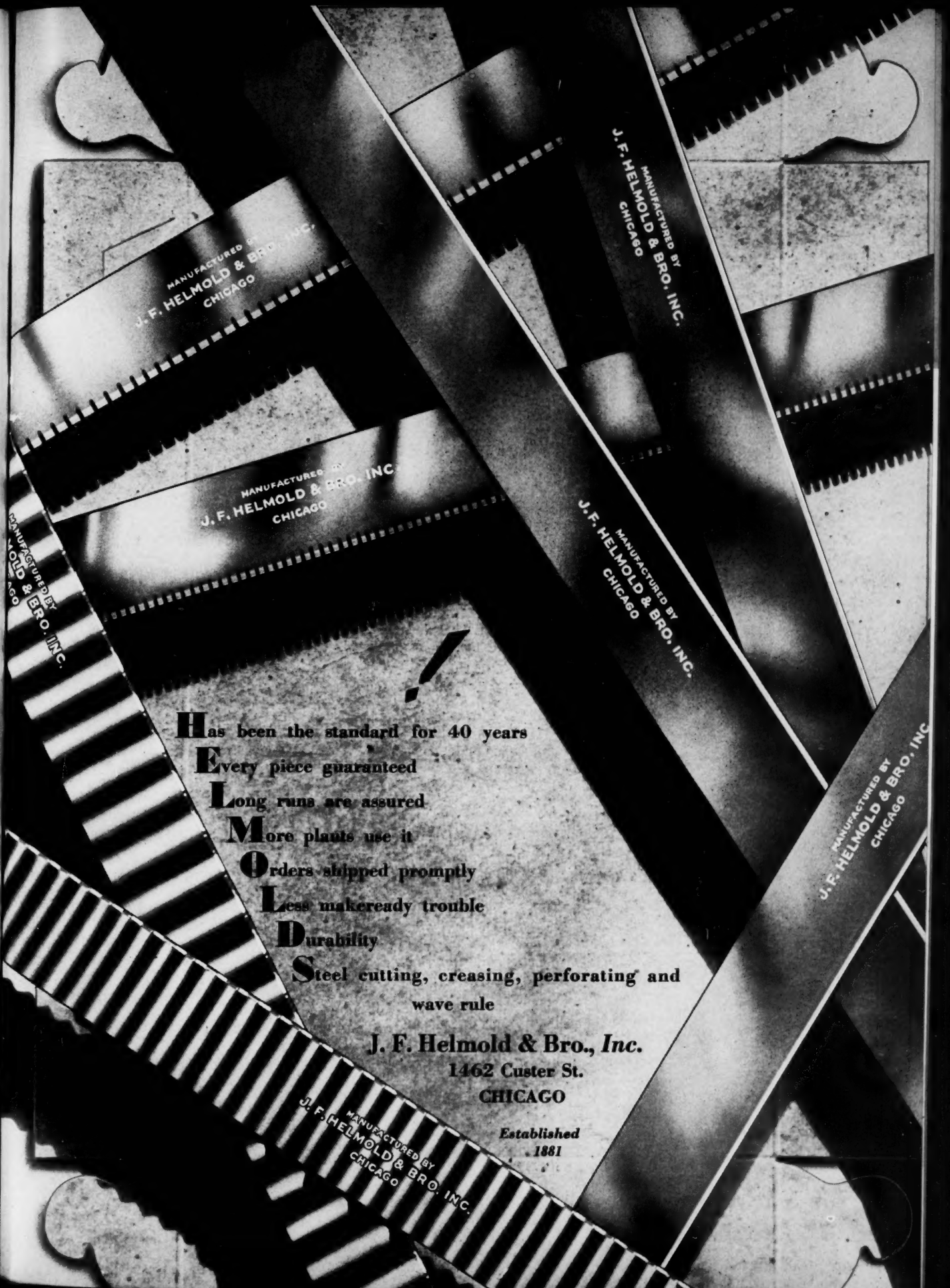


3. Modern shipping boxes are your traveling billboards. Piling them without regard to their printed sides is a waste of valuable advertising space.

When boxes are stacked in vertical piles straight up and down, weight is properly distributed over the entire bottom surface of the box and the units at the bottom of the pile will not be pinched or crushed by undue pressure on one side or corner.

Boxes are "interlocked" by placing one row *endwise*, the next higher row *crosswise*, the next *endwise* and so on. If boxes are square, the interlocking effect can be secured by staggering the boxes in alternate rows. In either case, note that a box is never placed squarely on top of the box below it, but is placed so that it covers parts of two boxes in the underlying row.

More important than it might seem, is the rule to keep boxes right side up. Their advertising and merchandising power is enhanced, while some products travel more


MANUFACTURED BY
J. F. HELMOLD & BRO. INC.
CHICAGO
Has been the standard for 40 years
Every piece guaranteed
Long runs are assured
More plants use it
Orders shipped promptly
Less makeready trouble
Durability
Steel cutting, creasing, perforating and wave rule
J. F. Helmold & Bro., Inc.
1462 Custer St.
CHICAGO
Established 1881



Model 32KG. 12" Throat Standard Bottom Sealer. A fast-operating, highly efficient machine for the box manufacturer and the box user. Widely used on corrugated and fibre shipping containers. For bottom sealing boxes up to 24" long. Also furnished with 20" throat for larger boxes.



Model 32K. 12" Standard Arm Stitcher. For suit boxes, telescope boxes, set-up boxes. Three-piece boxes and special applications. Also similar models with 20"–30"–36" and 45" arms.

Morrison WIRE

WHY STITCHING IS THE BEST METHOD FOR ASSEMBLING AND SEALING SHIPPING CONTAINERS

Wire stitching of shipping containers is not new. But with the enormous increase in the use of solid-fibre and corrugated boxes each succeeding year, wire stitching takes on greatly added significance.

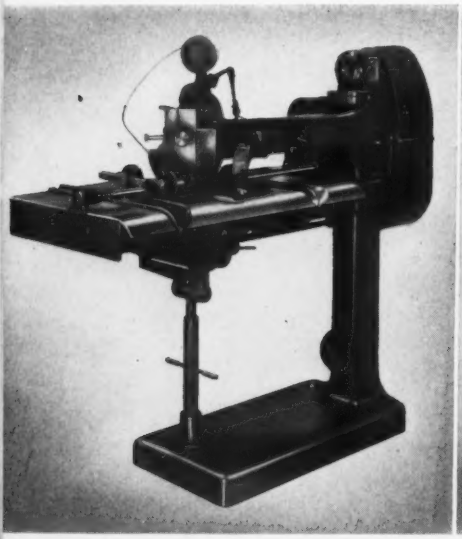
What every box manufacturer knows should also be of genuine interest to the box user. Today the trend among shippers is distinctly toward wire stitching as the preferred method of bottom sealing and top sealing.

Note these five important advantages:

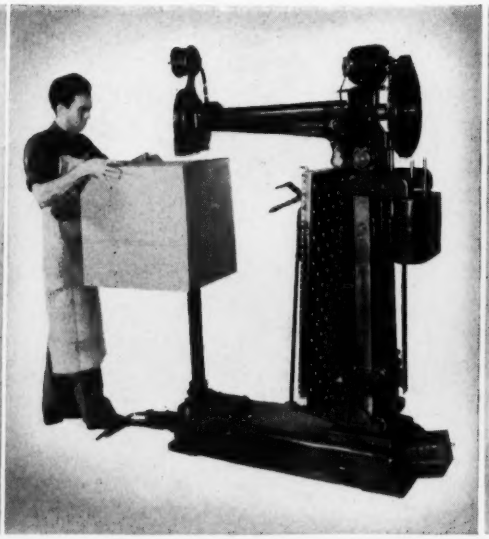
1. **Stitched cartons average twice as strong as those sealed with paste or tape.**
2. **Wire stitching saves up to 50% on labor expense over most other sealing methods.**
3. **Wire stitched cartons are pilfer proof; yet in the factory or shipping room can be opened when necessary and restitched with minimum time, trouble and expense.**
4. **A wire stitched seal is not weakened by moisture.**
5. **A wire stitching machine—i. e., a Morrison—will pay for itself in a few years by the saving made in sealing materials.**

One or more of these advantages may be of primary importance in your shipping room. Why not let us review your container problems, to see how Morrison wire stitching can do your work—probably better, faster and cheaper? Our sales engineering staff is at your service.

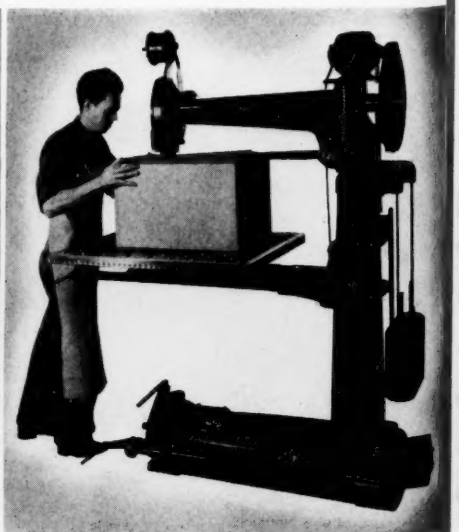
Descriptive literature and performance data will be furnished to any shipper gladly, without obligation. And if you want *Service,* either 'phone, wire or write us and a Seybold-Morrison man will see you promptly.



Model SLS Semi-Automatic Side Seam Stitcher. A Box Manufacturer's Machine—Side stitches corrugated board or solid fibre. Operator folds the box and inserts into the machine and the stitching is done automatically with accurate spacing while operator folds the next box. This model has wide range of adjustment for almost any size box and any required number of stitches.



Model 32MF Combination. 30" Combination set up for Bottom Sealing. Other similar models with 20" and 36" throat depth. Quick acting counterbalance roller top table folded up for Bottom Sealing.



Model 32MF Combination. 30" Combination set up for top sealing. Same as machine illustrated immediately to left but post has been removed and table folded down for top sealing of the filled carton.

XUM

STITCHING MACHINES

WHY MORRISON MACHINES ARE PREFERRED BY LEADING BOX MANUFACTURERS AND BOX USERS

For side seaming, for bottom sealing and for top sealing, box makers and box users alike prefer Morrison wire stitchers. Well-known as the pioneer and leader, with over 40 years of manufacturing experience in this field, Morrison has studied and helped to solve the container problems of hundreds of companies.

Here are some of the reasons why shippers have bought and continue to buy Morrison machines to wire-seal containers:

1. TROUBLE-FREE PERFORMANCE—In thousands of customers' plants, there are Morrisons—one, two or more to a shop—which have been operating steadily, month in, month out, for many years, with a minimum of time lost for maintenance and repairs.

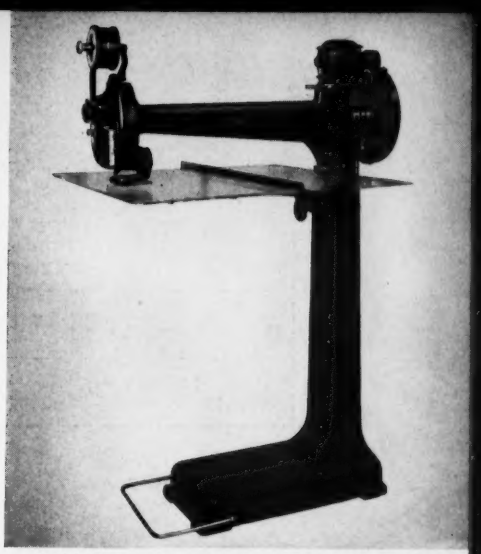
2. LOW MAINTENANCE EXPENSE—Formers, drivers, supporting shoes, and other parts that bear the brunt of the wear, are purposely made simple in design so that they have long life, and replacement cost is low. Also, they are quickly accessible in all Morrison models.

3. RUGGED CONSTRUCTION FOR LONG LIFE—The Morrison is the strongest and best built wire-stitcher made. This is the secret of its unusually long life. We have records of many machines that are still in use after more than twenty-five years.

4. EASY TO OPERATE—Operators like to use Morrison machines. In over forty years of manufacturing, many refinements of design have been introduced, making for easier adjustments, greater convenience and simplicity of operation.

5. UNEXCELLED SERVICE—Morrison wire stitchers are sold and serviced by the Seybold Division of Harris-Seybold-Potter Company. Through our sales agents and from the factory, there are available both sales engineers and skilled mechanics who can always give you quickly the expert advice and help you may need in your shipping department.

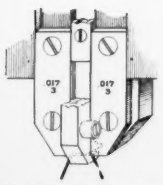
Seybold Division,* HARRIS-SEYBOLD-POTTER CO. • *Dayton, Ohio



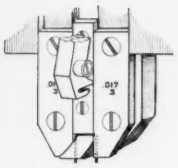
Model 32M Side Seamer. 30" Arm Stitcher with table and open head device. For side seaming—a box manufacturer's machine. Also furnished with 45° or 90° head for angle stitching. Other similar models with 20", 36" and 45" arms.



Model SJF Steel Stitcher. 20" Straight Arm Steel Stitcher. For extra heavy duty—can stitch two thicknesses of No. 18 gauge sheet steel and any kind of box material. Various shaped arms can be furnished for special shapes of boxes or other applications. Other similar models with 8" and 25" arms.



Method of stitch or staple formation, showing operation of staple-forming mandrel.



Stitch support—note how rigidly the supporting shoe holds the wire on top and sides; also rugged formers and driver.



Wire controlled by spring tension. So it cannot unroll and become tangled.

Wire feed control. Machine can be operated to observe movement without feeding wire.

Gear driven feed rolls instantly adjust themselves to any size wire within the limits of the machine.

Regulator for amount of wire to be fed. The legs of the staple or stitch can be adjusted to individual requirements.

Cutting mechanism. Simple yet wholly reliable in operation. Also showing adjustment to take up knife wear.

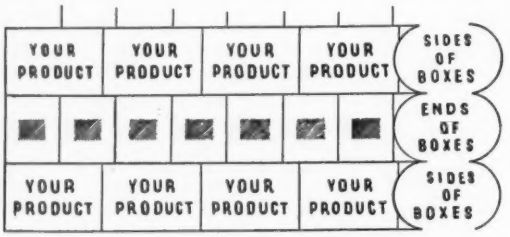
Rugged clinching mechanism easily removed and conveniently adjusted.



Back of supporting shoe mechanism.

The crowning achievement of Morrison "Perfection" Stitchers is due to a great extent to the never-failing wire feeding movement. A study of the above will prove its superiority in simple features and unrivalled design.

safely and reach their destination in better shape if the boxes remain always upright.

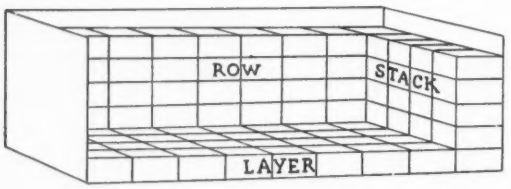


4. Take care to see that boxes are level horizontally and in a straight line vertically. A sloping or bumpy floor should be leveled off with boards or other material before piling boxes.

How to Load Shipping Boxes

Now that products packed in corrugated shipping boxes are transported in trains, trucks, airplanes, ships and almost every other form of freight carrier, the loading problem becomes more and more complex. And yet, although loading methods must adapt themselves to varied conditions, some basic principles will apply in all instances.

The following outline, designed primarily as a guide for loading carload shipments in freight cars, contains fundamental rules that will be of assistance in some other loading jobs.



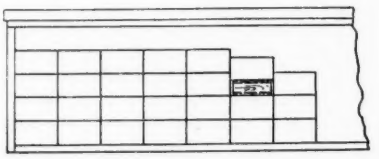
5. Illustrating the definitions of row, stack and layer, terms used in determining the number of boxes a car will accommodate.

Use "clean" cars: A "clean" car is one that has a good level floor, is free from protruding nails and is in good condition generally. The ordinary meaning of the word "clean" is, of course, another requirement. If there are protruding nails, remove them. Clean up all water or oil spots. When using refrigerator cars, cover the floor racks with corrugated board and cover bottom screens of ice bunkers.

Estimate the load: With the car carefully checked and in good condition, next step is to estimate the load, to find out how many boxes the car will hold. If the load doesn't completely fill the car, determine the best arrangement for the partial load.

To estimate the number of boxes a car will accommodate, it is necessary to place in the car only one row lengthwise and one row crosswise, both stacked as high as space will permit. Multiply the number of boxes in the lengthwise row by the number in the crosswise row. The result obtained will determine the number of boxes the car will accommodate.

When the number of boxes isn't sufficient to fill a car, estimating the load will enable the loaders to start end rows at the right height, making a good firm part-load without confusion and delay. To determine how many layers high the part-load will be, first lay down a single layer row lengthwise of the car, then a single layer crosswise. Multiply the number in one row by the number in the other. Divide the result into the total number of boxes to be loaded and you get the number of layers *high* of the part-load. For example, you have 600 shipping boxes to load. The car accommodates 20 boxes in a lengthwise row and 6 in a crosswise row, or 120 boxes in a single layer. Dividing 120 into 600 gives you 5, the number of layers in the load. In this instance, naturally, you would start stacking the rows 5 layers high. If there were 640 instead of 600 boxes, the 40 boxes would form an incomplete sixth layer which should be held in place securely by means of an incomplete layer brace.



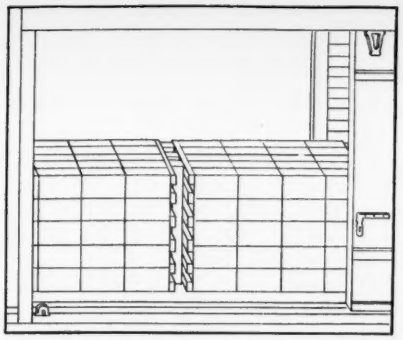
6. An incomplete layer brace used to hold containers securely in place during shipment.

Loading the Car

The following rules will be found to cover most loading problems:

1. Load lengthwise. Boxes should be loaded lengthwise of the car, the longest side of every box being parallel with the front-to-rear line of the car. Keep tops up. Work from ends of the car to center.
2. Load same size boxes together. When loading boxes of different sizes, keep all boxes of the same size together.
3. Use loading jack to keep boxes pressed firmly toward ends of car. The less "play" is permitted to come between the rows while loading, the safer will be the loaded merchandise.
4. Use center bulkhead to fill any remaining space. After loading car from ends to center, any space remaining at center of car should be filled with a bulkhead.
5. "Stagger" crosswise rows if boxes do not completely fill car from side to side. The extra space will be harmless if the load is arranged so that alternate rows touch opposite sides of the car.
6. Use incomplete layer brace when loading partial top layer. If there is part of a layer left over on top of the load, use a brace to lift one crosswise row of boxes, thus making the lifted row hold the incomplete layer firmly in place.

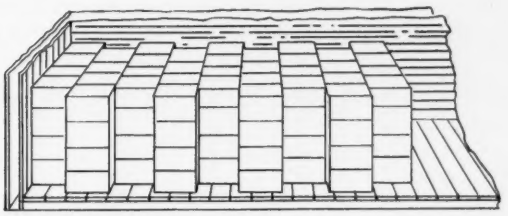
XUM



7. After loading car from ends to center and to a pre-determined height, any space remaining in the center of the car should be filled with a bulkhead.

7. Install adequate doorway protection. After loading is completed, with all braces in place, install a good doorway barricade. Important things to remember about doorway barricades—use plenty of nails to get a strong structure; space horizontal boards so that each board helps restrain *two* layers of boxes; set inside faces of the boards flush with the inside of door posts. Doorway protection also includes weather stripping at car doors to prevent water damage. Where outside weather stripping is not provided, use several thicknesses of paper for an inside job, tacking to door post from top to bottom, wrap around door post and then tack again. Loose ends will lie snug against door when it is closed.

In shipping by air express, loading is done by the carrier. There are no special rulings or requirements covering packaging of products for air express. Pack the merchandise in corrugated shipping boxes as you would pack for railway express shipment. No outside wrapping is necessary. Just seal the package, attach the address label and mark plainly "Ship by air express."



8. If crosswise rows do not fill car from side to side, stagger the rows with alternate rows touching opposite sides of the car.

Steel Strapping Shipments

by V. C. HOGREN*

After a product is made, the manufacturer or the shipper still faces the important problem of safely yet economically delivering the material to the buyer. Safely—because on this factor may depend the winning or losing of future business. Economically—because the difference of a few cents in cost may mean either a profit or a loss on the transaction.

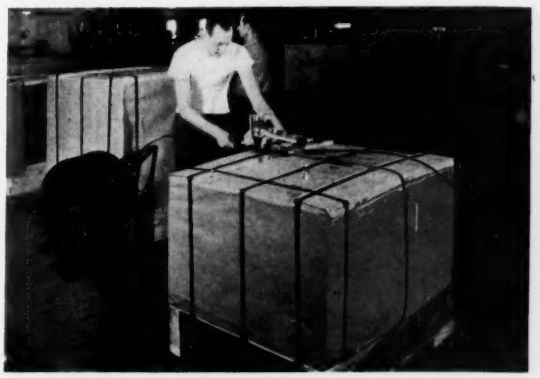
To steel strapping may be given the major credit for the low cost of safely carrying the nation's products. Practically every conceivable type of pack—ranging from small parcel-post packages to carloads of sheet steel—can be made more secure and can be shipped more economically when steel is employed. These economies are possible through lower container costs, freight charges, and elimination of damage and pilferage losses.

The Federal Government[1] recognizes the value of steel strapping as an aid to economical distribution, for its suppliers are permitted to use less expensive boxes when properly reinforced with steel strapping. Another bulletin,[2] this one issued by the Forest Products Laboratory of the U. S. Forest Service, states "The thickness of lumber required . . . in a nailed wooden box to give it adequate strength . . . may safely be reduced 20 to 40 per cent if properly bound with metal straps."

Freight classification rules often require the use of steel strapping on bundles and bales as well as on many specific articles. This also applies to widely diversified export packs which are of necessity reinforced to prevent damage and theft. However, domestic shipments account for the largest percentage of strapping applications.

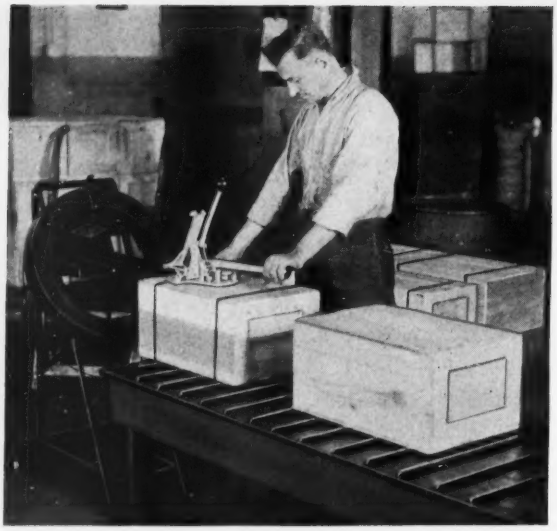
Two kinds of steel strapping are available: nailless and nailed. The latter, which is nailed to containers, is rapidly being displaced with the nailless type which can be applied quicker and more effectively. Tools, made for the purpose, tension and seal the strapping.

* Advertising Manager, Acme Steel Co.



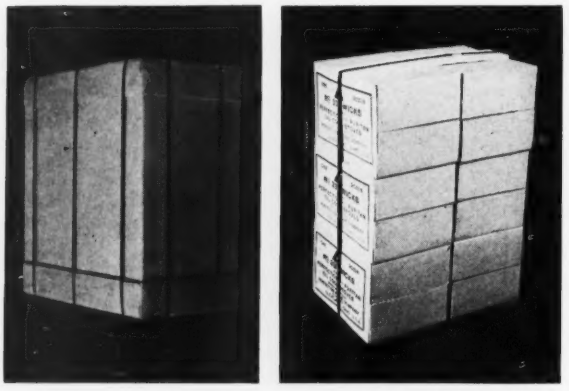
1. Strapping large paper weight shipment onto a skid. Note portable strap holder. Courtesy Acme Steel Co.

[1] Federal Standard Stock Catalog Sec. 4, Part 5 (NN-B-621).
[2] Technical Note No. 183, Forest Products Lab., Madison, Wis.



2. Applying steel strap to wooden cases. Note tightening and strap cutting and sealing unit. Courtesy Acme Steel Co.

3 4



3. Because of steel strap, this carton can be classified as a bale.
4. Steel strap makes one conveniently handled unit out of these six packages.

Strapping on Wood Cases and Crates

Obviously the strength of these containers is considerably enhanced with steel strapping. So much in fact that the lumber in cases and crates can often be safely reduced by a minimum of 20 per cent. Frequently the reduction is greater and attractive savings in costs accrue. Specifications made by container redesign laboratories frequently include steel strapping for protection and added strength. Since shipping cases are made lighter there is further economy in lower transportation bills. Of most importance, however, is the elimination of damage and pilferage, twin evils in present day merchandising.

If one strap is recommended it should be centered on the box. When two straps are used each is placed one-sixth the distance from either end. Three or more straps may be suggested on long cases and there are conditions under which straps are placed at right angles. The tension applied on the straps by the tensioning tool or stretcher (as it is commonly known) should be sufficient to cause the straps to cut into the edges of the box.

Strapping on Cartons

Both fibre and corrugated boxes can be made more secure with steel strapping and the straps often serve not only as a reinforcement but as a means of closure. Hence by merely snipping the straps, the package can be quickly opened, without damage to the carton. This is a decided advantage when the contents are to be inspected or altered and the same container used for re-shipment.

Through the use of steel strapping it becomes possible to take advantage of the ease and economy of employing fibre or corrugated wraps instead of containers on some commodities. It would be well for shippers to investigate the freight classifications on their products as it may be possible to obtain lower rates with steel strapping.

Strapping on Bales and Bundles

The security of compressed bales is due almost entirely to straps. In fact the textile industry was one of the first principal users of steel strapping. The number of straps on a bale depends upon its size, weight, and the amount of compression exerted by the baling press. Bundling also offers exceptional possibilities for savings. This field can be divided into three general groups:

1. Bundling of several packages into a unit: Two or more cartons or wood boxes can be strapped to make a single package. The advantages of this method are evident as only one shipping label is required—handling is speeded up and none of the boxes can become lost or separated from the rest. Theft of smaller packages is eliminated and the fewer units handled frequently results in lower traffic costs.

2. Bundling to eliminate containers: This type of bundling can be applied to a number of products which do not actually require a package. Both the container cost and freight on its tare weight are saved through the use of steel strapping.

3. Classification of cartons and fibre-wrapped packages as bales or bundles: Carriers permit steel strapped cartons and fibre-wrapped packages of some commodities to be classed as bales or bundles, and consequently lower freight rates are obtained by the shipper. This is only possible when a steel reinforcement is employed.

Steel Strapping on Skids

This is a most convenient method of shipping merchandise. Although paper has been skid-loaded for years, the range of products now benefited extends to bricks, motors, tin-plate, lumber, tubing, etc. With this system the commodity is strapped to an inexpensive skid or pallet. Hand or power trucks quickly move the unit which would be too heavy for manual handling. Space is conserved when skids are stacked on one another. Steel strapping makes the skid idea possible and profitable to both shipper and receiver.

XUM

Wire Stitching Containers

by G. PRESCOTT FULLER*

Assembling and sealing containers by means of wire stitching is much used because of the ease of its application and the strength and security of the joint, each stitch giving a positive closure of the flaps. No setting time is required as when adhesives are used, and relatively cheap labor can be employed. Furthermore, if warehousing and repacking are desired, the stitches can be removed with a screwdriver or special tool without appreciable damage to the case, whereas a box with glued joints cannot be opened without serious tearing of the flaps. The method is economical, as inexpensive machinery is needed, and wire stitches cost only from three to five cents per thousand. Wire stitching is of general application, irrespective of the size of the container, the construction of the flaps or the kind of board of which the container is made.

All wire stitching machines are variants of the simple box stitcher, which comprises a stitcher head, a body or frame supporting the head and also containing the driving mechanism, a base supporting the body and a horizontal arm for holding the work. The end of this arm contains the clinching device. Stitching heads are of two general types, in one of which the wire is fed from the side while in the other the wire is fed from the top. Both types are constructed with means for feeding the wire and cutting it in predetermined lengths, receiving the piece of wire and transferring it to the bending mechanism, bending the ends of the wire to form legs, and driving the formed stitch through the work, a supporter being provided that supports and guides the stitch while being driven. The arm contains a grooved clincher which receives the legs of the stitch and bends them inward and tightly against the under side of the container on which work is being done.

Stitcher heads with side wire feed are usually employed for stitching containers since they can be more ruggedly constructed, while the vertical feed type is used for multiple head work because the heads can be placed closely together.

The clinching arm is quickly adjustable, up or down, to accommodate varying thicknesses of work and the wire feed is also instantly adjustable. Angle arms can be obtained for handling special classes of work, and adjustable gauges of various sorts can be had for facilitating repetitive operations. Machines are available with the stitcher head set at an angle so that stitches can be driven at 45 deg. to the grain or the corrugations of the container board.

Many different sizes and shapes of wire may be used. The width of the crown can be changed, provided the proper parts are installed. The ends of the wire can be cut square or at an angle of 45 deg. as desired. The wire usually employed is of copperized or galvanized steel, .103 in. wide and .017 in. or .020 in. thick. Another type of wire is 0.60 in. wide, and .020 in. or .024 in. thick. The number of stitches of average length per pound of wire will run from 1600 to 2500, and the cost from three to five cents per thousand. Stitching wire comes on 10-lb. spoolless coils, an aluminum spool-holder being used in setting it up on the machine. The usual crown length is $^{3}/_{8}$ in. or $^{7}/_{16}$ in., although for certain special purposes longer or shorter crowns are sometimes employed.

The following sections describe the more usual applications of wire stitching in the assembling and sealing of containers as now practiced.

Slotted Containers

Box stitchers are used for stitching the manufacturer's seams of regular slotted containers. This operation can be performed on a standard box stitcher, the work being pushed along the arm as stitched, and the finished box afterward withdrawn. The box may also be folded over the arm and stitched as it is being withdrawn toward the operator. There is a slight advantage in making up boxes in this way in that the flange may be more accurately positioned along the adjacent side than when the box is folded on the creases and then stitched. Stitches are placed about $2^{1}/_{2}$ in. apart, with tie stitches sometimes used at each end of the seam, although on boxes less than 18 in. in depth the classification permits a maximum spacing of 3 in.

It is usual practice to use the so-called "slotted container stitcher" for this operation, this machine being equipped with a table on which the blank rests, and also an open head device (or clincher tongue) bolted to the stitcher head and rigidly or semi-rigidly supported thereby. The open head device is merely a double guiding member and clincher arm which holds the stitching flange and the opposite side panel in proper position during the stitching. The box blank is folded along two opposite creases so that the flange overlaps the adjacent panel, the flange and panel being guided through the open head and then stitched. The finished box is removed from the discharge end of the machine, thus making a straight-line operation.

For stitching corrugated boxes, it is preferable to have the stitches diagonal to the corrugations to give greater holding power, and machines up to 48 in. in throat length are available for this work. The operation is carried on in the same manner as when a straight head machine is used.

Semi-automatic R. S. C. stitchers are often used for this work where long runs of one size are involved, the ma-

* Dexter Folder Co.

chines having one stitcher head set at an angle of 45 deg., and which in some cases is of the duplex head type to permit driving double rows of stitches, or tie stitches at each end of the seam. The machine is equipped with devices which square the box and set the first stitch in proper position, and space the other stitches evenly and in predetermined number, the finished box being ejected by means of high-speed rollers at the rear end. The machine is quickly adjustable for different sizes of boxes, and one operator can easily turn out 30 to 35 boxes per minute having five stitches in the seam. Larger boxes naturally require more time.

Three-Piece (Bliss) Boxes

One style of three-piece box has the stitching flanges made a part of the body blank and is usually assembled on a box stitcher, a nub being placed over the end of the arm which forms a guide or spacer to bring the stitches at the center of the flange—a panel holder also being furnished for convenience. The operator first pushes the top flap of one end panel into the panel holder, then folds up the body blank into shape and pushes the same over the end panel. By holding the sides firmly in the hand the end panel is also held in position, and the box placed over the stitching arm and the bottom flange attached by means of a single stitch in the center. The three flanges are now stitched, tie stitches usually being placed at the top and bottom of the side flanges for greater strength. When offset slotting is used, with the bottom corners overlapped, a stitch should be placed as close as possible to the overlap, and double stitches in the overlap itself. A machine with a V arm may also be used, in which case the stitches are placed at an angle of 45 deg. to the grain or corrugation of the board, which gives a somewhat stronger joint.

Another type of this box has the stitching flanges made a part of the end panels, and is assembled on a special double head stitcher with 45 deg. heads. A movable and adjustable work table is placed between the stitcher heads, the edges of the table serving as guides in the assembly of the box. The first step consists in laying the body blank on the table with one top flap bent down in front of the operator, who holds the two end panels in position against the sides of the table so that the stitching flanges overlap the first side of the box in proper position for stitching. One stitch is placed while the table is in its outward position, the table pushed in and the remainder of the stitches placed in order, automatically spaced. The body blank with the ends attached is then moved forward and bent over the end of the table, thus presenting the bottom for stitching. The flanges on the bottom of the ends are folded in place and stitched as before. The third operation is a repetition of the second and this completes the assembly of the container.

The second style of box can also be assembled on a V arm machine, although this must be done one side at a time and the speed is less than when a double head stitcher is employed.

Recessed-End Boxes

These may be stitched on regular box stitchers equipped with a gauge to properly position the stitches in the center of the flanges. If desired, an adjustable table can be placed below the clincher arm to support the box while being stitched, especially after it has been filled with the product to be shipped.

Telescope Boxes

The blanks for heavy telescope boxes are received flat by the customer and may be creased twice at each corner, with diagonal slotting, so that the corner flaps fold up in triangular form, either against the ends or the sides of the box as desired. This construction is shown in Fig. 1 and Fig. 2.

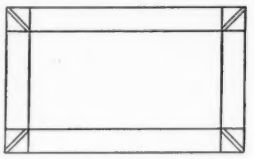


Fig. 1

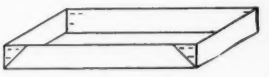


Fig. 2

The flaps are stitched on a box stitcher in the manner shown, the number of stitches placed depending upon the weight and character of the contents. Sometimes one of the triangular flaps is folded outside of the end, and the other inside of the side, both being stitched in place to give added strength. Another method of making up such boxes is to crease and slot the corners so that when assembled, rectangular corner flaps are formed which are folded up against either the end or the side of the box as desired. This construction is shown in Fig. 3 and Fig. 4.

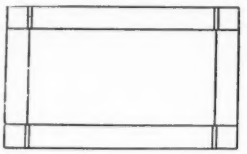


Fig. 3

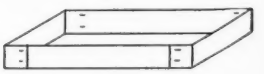


Fig. 4

Folding Suit-Boxes

These are usually stitched by hand on single head box stitchers provided with gauges. Multiple head stitchers may be used, however, where production requirements run to large volume.

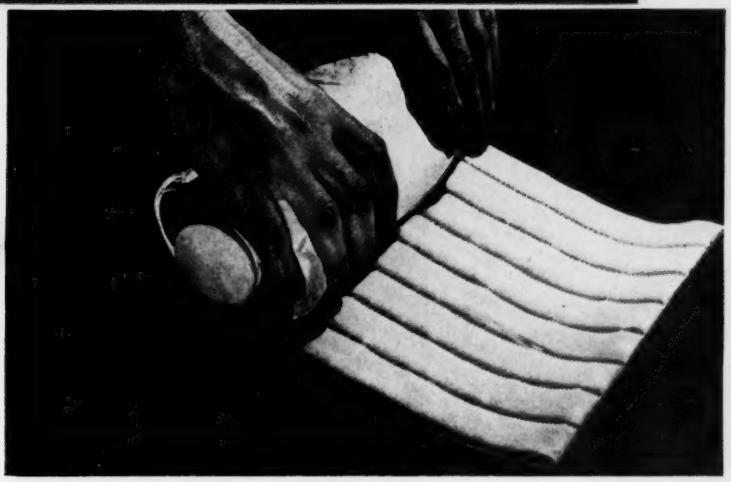
Wood-End Boxes

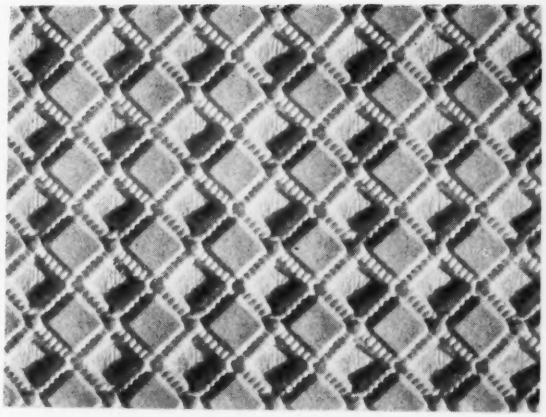
Wood cleats are frequently applied to the end panels of three-piece boxes; also panel boxes are often made up with wood frames and fibre sheets. The wood is usually $^{5}/_{16}$ in. to $^{3}/_{8}$ in. in thickness, and the board may be either solid fibre or corrugated. This combination of materials can be stitched on a standard box stitcher, but

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a special wire draw gear may be required in order to form staples with a sufficient length of leg to penetrate the wood and fibre and clinch on the other side. Double head stitchers may also be employed.

Cracker-Caddy Covers

The covers of the familiar cracker caddy are about 10 1/2 in. square, with flaps that are from 3/4 in. to 1 in. wide. The flaps may be arranged in two ways, as shown in Fig. 5 and Fig. 6.

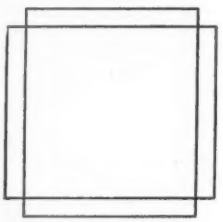


Fig. 5

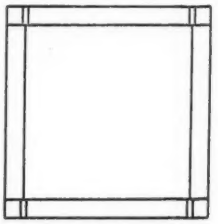


Fig. 6

When the corners are cut out as in Fig. 5, the covers are stitched on a corner stay machine, using a stitch that has the crown bent at an angle of 90 deg., one leg being clinched in each flap. The driver is cut out in the center at an angle to drive the stitch with a 90 deg. angle crown, and a moving clincher mechanism is employed that clinches the staple legs flat against the flaps, which are brought tightly together. The arm of the machine is also shaped with a 90 deg. angle. In practice the operator sits in front of the machine and stitches the four corners in succession, frequently working at a rate of 15 or more covers per minute.

While the usual type of caddy cover is cut out at the corners, the one shown in Fig. 6 is sometimes used. This involves no more material, but makes use of the corner pieces (cut out in the other type) to strengthen the corners of the cover, slotting being employed.

Bag Closing

The tops of filled paper bags are often closed by wire stitching, using standard box stitchers. The top of the bag is either folded over once, or a double seal fold may be used, and two or more stitches inserted, fine wire such as No. 20, No. 25 or No. 1 Hybar being ordinarily used. A sufficiently light wire should be employed so that when the joint is pulled apart the wire will be held in the bag material and not loosened so that it can fall into the bag.

The sealing of heavy bags is best done on a machine with a horizontal stitcher head, the stitches being driven horizontally instead of vertically as usual. A table equipped with rolls is placed under the stitcher, or a standard conveyor is used, on which the bags stand with the flaps at the right height for closing. The top flaps are folded down and guided into the stitcher head between the driver and the clincher, using a bent sheet metal guide for that purpose.

Miscellaneous Uses

Box stitchers are also used for a wide variety of other operations such as fastening handles to paper shopping bags, attaching articles to cards; fastening sheets of insulating strips together; holding the ends of gaskets; assembling box specialties; stitching the ends of fibre drums; forming attachment hooks on automobile upholstery; attaching handles and fastening pads to sheet steel; attaching canvas backs and seats on lawn and porch furniture; and for assembly of berry baskets, display boxes, pastry containers, milk bottle caps and book matches.

Special attachments, guides, feeding mechanisms, etc., can be installed to facilitate any of these operations where high production is desired.

Bottom Stitching

A bottom stitcher is nothing but a standard box stitcher without the clincher arm, a vertical post being substituted which is mounted on the base casting or frame. The post is 1 1/2 in. to 2 1/2 in. in diameter and the clincher is fitted into the top, which is reduced in area to 1 in. to 1 1/2 in. in diameter. The head of the post is adjustable (up or down) by hand, to accommodate different thicknesses of board and is usually constructed with a heavy spring inside the post, so that if extra heavy work is inserted without proper adjustment, the spring will give and the stitcher head not be damaged by the strain. The post is hinged at the bottom, and by depressing a special pedal may be tilted forward to permit easy insertion of the box before stitching. The best types of bottom stitchers have a considerable opening between the top of the post and the stitcher head, and when small or medium size boxes are being stitched the operator can usually place them over the post without tilting the latter forward, thus saving time in the operation. (This is the usual practice when stitching the bottoms of cracker caddies.) The regular operating pedal is then used to set the stitcher in operation. In most modern machines a single pedal is employed, and the post normally tilted in forward position. When the pedal is depressed the post is first moved into vertical position and locked in place, and the stitching then commences without further movement of the pedal. The stitching is not necessarily continuous, since by partly raising the foot pedal the operation can be interrupted without releasing the post from its locked position.

Duplex head bottom stitchers are also used; a single stitcher head being arranged to drive two stitches at once, with the crowns in line and spaced two and one-half inches apart. A short bar is placed on the top of the bottom post, fitted with two clinchers properly spaced. Double head bottom stitchers have two stitcher heads which may be placed in fixed position (nonadjustable) for repetitive work on one size of box, or which may have narrow stitcher heads adjustably mounted. In either case a bar is fastened to the top of the post in which the clincher blocks are mounted, and for the adjustable machine the clincher blocks are movable over a fairly wide range.

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Bottom Stitching of Slotted Containers

In many industries it has been found good practice to stitch the bottom flaps of slotted containers before they are loaded, the advantage being that the box is thus held firmly in shape, with a secure bottom closure, while the goods are being inserted. In the glass bottle industry, for example, cases are usually bottom stitched, and after loading the top flaps are temporarily sealed by spot gluing, temporary stitching or taping and then shipped to the user, who fills the empty bottles, labels them, reloads in the box in which the empties were received and then seals the tops.

Bottom stitching gives a secure and strong attachment of the bottom flaps, unaffected by moist conditions of storage which would weaken a closure made with tape or glue. Furthermore, cases can be bottom stitched very much more rapidly than they can be glued or taped. Several conditions of bottom stitching are met with, the more important being described below.

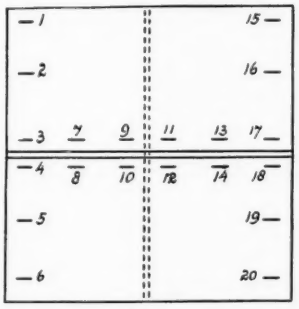


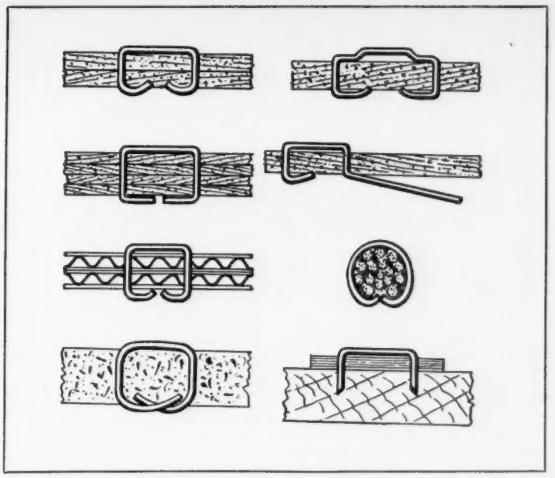
Fig. 7

All flaps of case meet in center: This condition is met in all square containers or in center special slotted cartons. When using a single head machine the stitches may be placed in the order shown in Fig. 7, or the stitches along the center may be placed first to hold the box in shape and the ends then stitched. The box should be held firmly from the two sides so as to hold the box square and avoid any gap between the outer flaps. The stitches should not be over $2\frac{1}{2}$ in. apart and the stitches along the edges of the abutting outer flaps are usually placed close to the edge. Double stitches are often placed at 9, 10, 11 and 12 the better to hold the inner flaps to the outer. Care should be taken that the stitches are tightly clinched so that the inside of the box will be smooth. When stitching corrugated boxes the container may be held at an angle to the machine, thus allowing stitches to be driven diagonally across the corrugations to give greater holding power.

Outer flaps meet, inner flaps not over 6 in. apart: The same method of stitching is used on slotted cartons which are not square, but in which the inner flaps are not more than six inches apart. No stitches, of course, are placed except where there are two thicknesses of board.

Outer flaps meet, inner flaps over 6 in. apart: Where the inner flaps are over 6 in. apart the Classification requires that if wire stitching is used, the outer flaps must be overlapped one inch or more and attached by wire stitches not over $2\frac{1}{2}$ in. apart.

Outer flaps overlapped: Containers of this construction are much used in the shoe and other industries, and when stitched on a single head machine, the center



Illustrated above is the application of wire stitching to various types of work and a showing of some of the different forms of staples available

overlap (1 in. or more) is stitched first, the sides of the box being firmly held between the hands of the operator. The stitches are placed across the overlap as the box is most easily held when the seam, or length of the box, is in the direction of the arm of the machine. The stitches on the ends may be placed either in the same direction as those on the seam or at 45 deg. or 90 deg. Of course all stitches may be placed parallel to the seam, but this is slower and not usually done. When the outer flaps are overlapped one inch or more the box may be of any length, without regard to the space between the ends of the inner flaps.

Full overlap boxes: Boxes with the bottom flaps fully overlapped are often sealed with glue; but when wire stitched it is usual to cut down the overlap to 1 in. in order to save material, except where the case is very long and narrow and extra rigidity is wanted.

Double head bottom stitching: In one method of bottom stitching of boxes, the outer flaps of which meet and the inner flaps meet or are not over 6 in. apart, the heads are set so that one stitch will be driven just inside the end of the box and the other just inside the edge of the opposite inner flap. The ends of the clincher bar form guides for spacing the stitches from the side of the box. The stitches are placed in order, one side being completed first, the box moved over on the post and the other two rows placed. An adjustable table is often fitted around the post to support the projecting top flaps of the box, which helps to hold the bottom flaps in flat position during the stitching operation. A disadvantage of double head stitching is that more stitches must be placed than are required by the Classification. The extra cost of these stitches is, however, usually not of importance compared with the value of the extra speed of the operation.

In single head stitching from three to six boxes per minute can be bottom stitched by one operator, while on a double head machine the output can be increased by 60 per cent or more. The output, however, will not be doubled, since an important part of the time of the opera-

tion is required for folding the box in shape, placing on the machine, and for removing the finished box after stitching has been completed.

Duplex head bottom stitching: A duplex head stitcher, driving two stitches at once, spaced 2 1/2 in. on centers, can be used on all boxes, whether the outer flaps meet or overlap; whereas a double head stitcher cannot be used on overlapped flaps since there is no way of placing the stitches in the center part of the seam. When used on a box with the outer flaps meeting, the center seam is stitched first, one stitch on each side of the joint. By holding the box at an angle to the machine the stitches may be driven diagonally and thus brought closer to the joint than when placed at right angles. The ends of the box are then stitched, the stitches being placed in order, two at a time.

When stitching a box with center overlap it is easier to stitch the ends first (since the box can be better held if both ends are equidistant from the body), the center seam being then completed. This can be reversed, however, and the center seam stitched first, but in this case one arm must be extended over the box to hold the opposite side until the first stitches have been driven. Duplex head stitching is not quite as fast as double head stitching since the position of the stitches in the center of the box, or on the overlap, must be judged by the eye (as in the case of single head stitching) although the stitches along the ends may be rapidly driven because the clinching arm forms a guide. It is, however, a method of wider application since it can be used without any machine adjustment for all sizes of boxes and for all flap constructions, and is much faster than single head stitching under average operation.

Cracker caddies: These small cracker boxes have the bottom flaps overlapped about 3/4 in., and two stitches are used on the small sizes and four or more on large caddies. Single or duplex head machines may be used, with two operatives, one of whom folds the box in shape and hands it to the second who does the stitching. Speeds of 30 boxes per minute are not unusual.

Top Stitching

A standard top stitcher comprises a box stitcher without the solid clincher arm, in replacement of which a thin steel blade is used with the clincher set in the end. This blade anvil is made of forged steel and is tapered toward the front to make it as thin as possible, being somewhat flexible as a result. These machines are made with blades up to 33 in. in length, which is adequate to handle any length of box in regular use.

Since the top stitching operation is always conducted on boxes that have been filled and may be of considerable weight, a work table is provided which is fitted with ball-bearings on which the box may be easily moved in any direction. This table is counterbalanced by means of springs or counterweights, and is quickly and easily adjustable up or down by hand, so that when the box is placed upon it the top flaps will be in proper position for the insertion of the blade anvil. When in use the operator lifts the case onto the table, stitches the flaps in order and removes the finished case to a truck or conveyor. When containers of varying heights are used they are placed on the table and the latter adjusted to the proper height for each.

A recent development in top stitching involves the use of a table lifted by means of the motor on the machine. The table lifting mechanism is connected to the motor through a special clutch, and a separate double-action foot pedal is used for its control. When the back of the foot pedal is depressed by the operator the table and case are lifted, a stop being attached to the head which automatically brings the table to rest at just the right position for the blade anvil to enter under the top flaps.

This machine can be placed beside a conveyor line, or made a part of the same, the lower position of the table being fixed at the proper level. Each loaded case as it comes to the stitcher is moved onto the table, raised by the power lift to the stitching point, stitched, lowered and pushed onto the discharge conveyor. This relieves the operator of the fatigue inherent in the lifting of each package by hand and also eliminates the danger of tearing the flaps and corners of the box when the latter is handled, unsupported by the table, before sealing. An operator using this type of machine can handle many more cases per day than by the old method and with a minimum of physical effort and fatigue, since a 90-lb. case can be as easily manipulated as an empty one.

Standard top stitchers are much used in the form of combination with a bottom post, the latter being removable while the blade anvil and table can be swung out of the way when the machine is used for bottom stitching. The change from one use to the other can be made in a few minutes, without the use of tools; and this machine is popular in small or highly departmentalized plants where a combination of operations on one machine is desirable.

Cracker boxes and caddies: Cracker boxes are not usually top stitched, the covers being fitted over the tops of the boxes and taped to the sides. However, two methods of attaching the tops by wire stitching have been developed and are in use in a number of plants. The first method requires the use of an inverted bellows flap on the body, comprising flaps on the top of the body which are turned back outside the box and the cover then fitted.

The second method is applicable to cracker boxes of regular construction, without the use of extra flaps. A horizontal stitcher is employed, the blade anvil moving downwards instead of upwards as in the preceding method. The cover may have die-cut slots, placed close to the edge, for the insertion of the tip of the blade anvil (which is made very narrow and thin for this work). As each stitch is driven the anvil is automatically moved down through the slot and then withdrawn again.

Bumper boxes: These boxes, used for automobile bumpers, shade cloth, roll screen wire, and other long articles, are relatively small on the ends. A horizontal stitcher is used with a regular blade anvil (thinner than usual), and the machine usually has no base, the body being bolted to a table on which the box is placed.

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Wooden Shipping Boxes

Three general types of wooden boxes and crates are utilized as shipping containers, respectively, sawn wooden boxes, plywood boxes and wirebound boxes.

Sawn Wooden Boxes

Although available in hundreds of sizes and weights to accommodate products ranging in size from pencil leads to bombing planes, wooden boxes made from sawn lumber are all classified under seven distinct headings known as Styles 1, 2, 2½, 3, 4, 5 and 6. The box styles are illustrated below and a brief description of each follows.

The Style 1 box, simplest of all, is adaptable to many types of products, with 60 lbs. as a reasonable weight limit. Boxes of this type consist of a single thickness of lumber made from one or more pieces of wood, with sides, top and bottom nailed to the ends. Top and bottom boards are nailed to the side grain of the ends and the side boards are nailed to the end grain of the ends.

In Styles 2, 2½ and 3, each end is strengthened with four cleats. The ends are thus reinforced against splitting and the sides are strengthened by the greater holding power of nails driven into the side grain of the vertical cleats. For gross weights of more than 200 lbs. and for large containers such as are used for textiles, these styles are commonly used.

The Style 4 box is designed to carry loads up to 200 lbs. and to withstand severe handling. The two heavy cleats at each end of the box will strengthen the ends against splitting, provide side-grain nailing for the sides and help to take the thrust if the box is dropped.

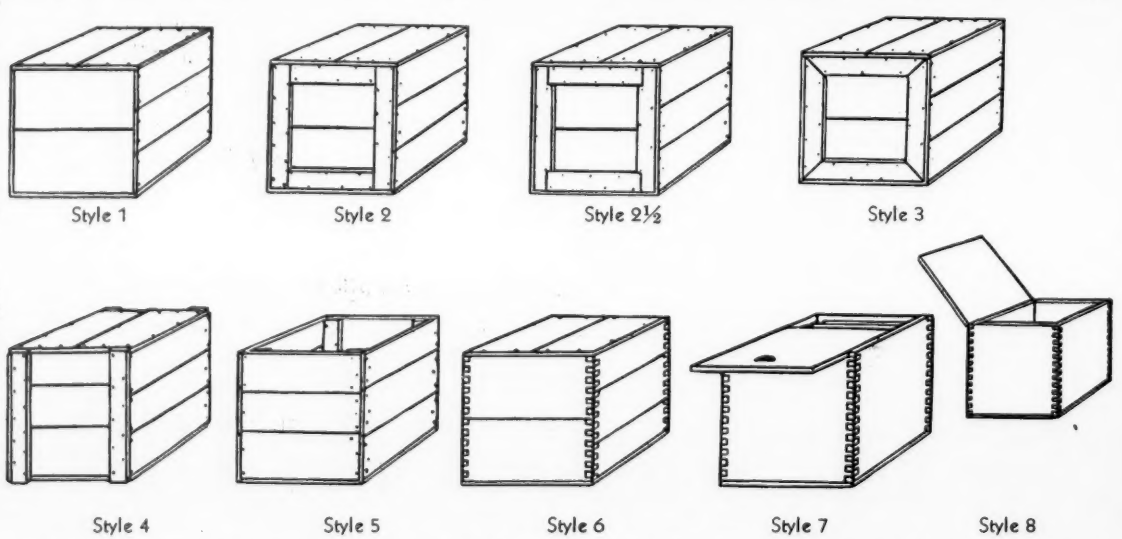
When the question of storage space makes desirable a reduction in the outside length of the package and when the shape of the contents is such as to leave space in the corners of the box, cleats are placed on the inside to form the No. 5 box. These cleats may be either square or triangular, depending upon the nature of the contents and the cost of manufacture.

Style 6 boxes, with lock-corners, are often used when tight, rigid packages are required. Weights carried usually range from 10 to 150 lbs. Lock-corner boxes are of particular value for products that are subject to sifting or where maximum rigidity is required.

In selecting any one of the seven styles of boxes, a shipper may be influenced to some extent by the comparative initial cost, without giving due consideration to other important factors. In general, Style 3 boxes cost the most and Style 1 boxes the least. Although the difference in cost is not great, there is a big difference in the performance of the several styles of boxes and in the protection they offer the contents.

So many elements affect the durability of a box and its ability to withstand present-day handling and transportation that it is not practical to present concrete comparisons of the advantages of the various types. The species of lumber employed, its quality and dryness, the care used in the manufacture of shooks (box parts), the nailing and closing of the boxes, the character and density of the contents and the method of interior packing, all affect behavior of the box when in use.

The distance the box must travel and the transportation facilities to be used, will appreciably affect the de-

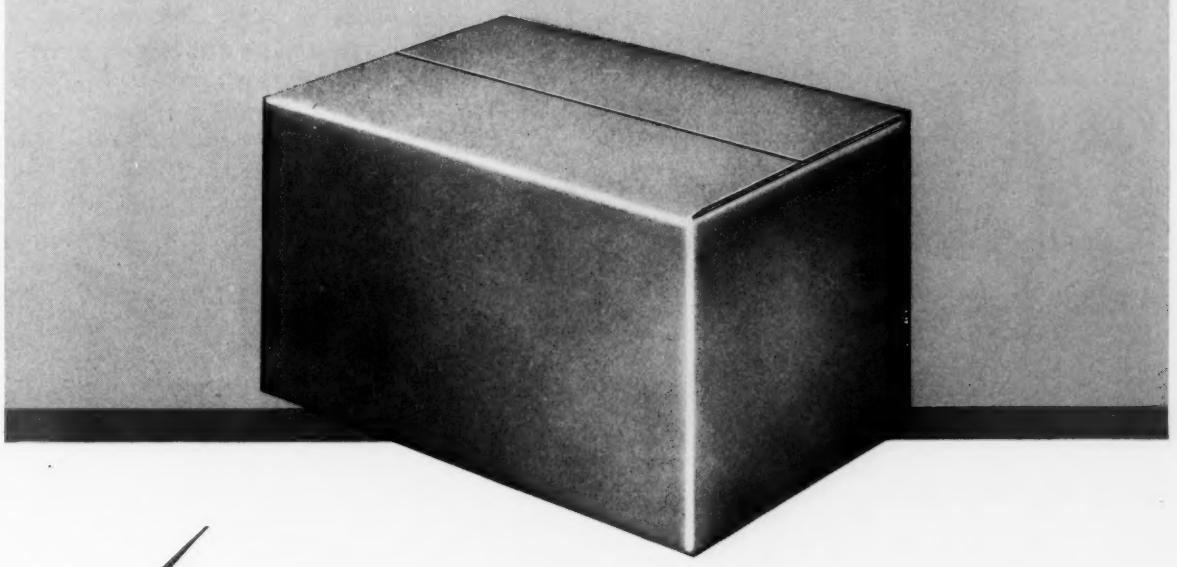


Style 1: Nailed wooden box; uncleated ends, sides held by end grain nailing. Style 2: Nailed wooden box; double cleated ends eliminate weaknesses found in Styles 1, 4, and 5. Styles 2½ and 3: Variations of Style 2 box. Style 4: Nailed wooden box; outside cleats. Style 5: Nailed wooden box; inside cleats. Style 6: Lock-corner box; cover and bottom held in place by nailing. Styles 7 and 8: Variations of Style 6 box. Courtesy The New England Box Co.

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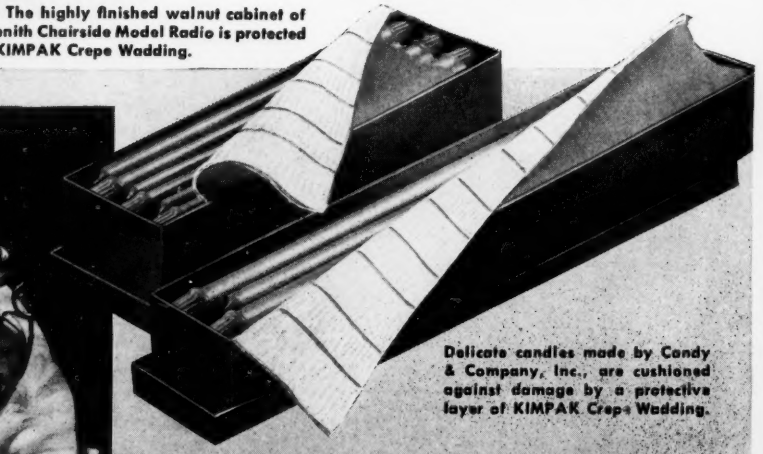
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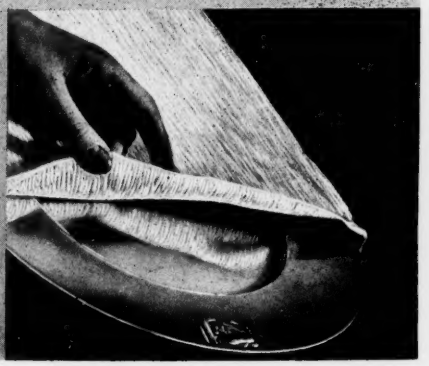
● Whether your product is large or small, fragile or husky, you can protect it with KIMPAK* . . . KIMPAK is clean, soft, resilient, absorbent and free from grit and dirt; conforms to Parcel Post regulations regarding shipment of acceptable liquid products. KIMPAK comes in rolls, sheets and pads of various thicknesses. In addition, virtually unlimited variations of KIMPAK are available to solve special shipping and packaging problems . . . Get the new portfolio of KIMPAK samples. Mail coupon on opposite page, now!



Delicate candles made by Candy & Company, Inc., are cushioned against damage by a protective layer of KIMPAK Crepe Wadding.



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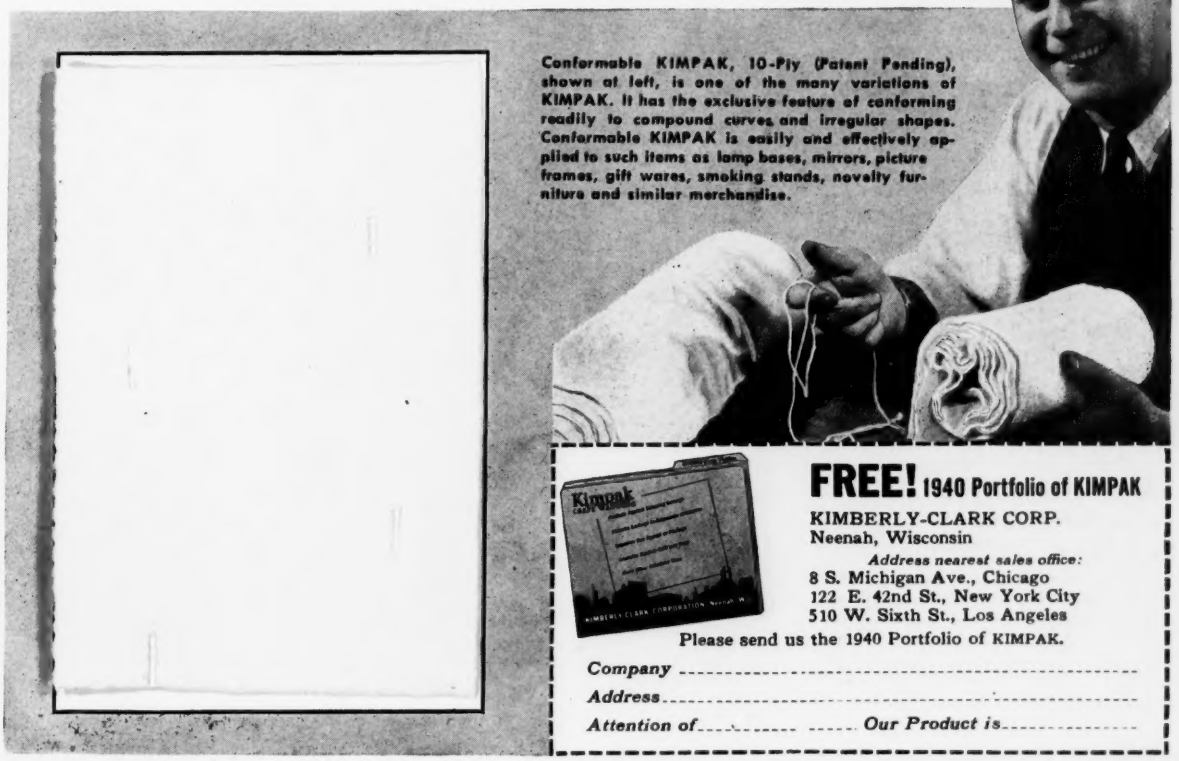
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Conformable KIMPAK, 10-Ply (Patent Pending), shown at left, is one of the many variations of KIMPAK. It has the exclusive feature of conforming readily to compound curves and irregular shapes. Conformable KIMPAK is easily and effectively applied to such items as lamp bases, mirrors, picture frames, gift wares, smoking stands, novelty furniture and similar merchandise.

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sign, as will the use of reinforcing metal straps or wire. Although there is an impression among shippers that lighter containers may be used for carload shipments, it should be remembered that, except in rare instances, every container may move in less-than-carload traffic before reaching its destination.

Boxes rigidly constructed from sawn lumber, in itself tough and hard, offer a high degree of protection against cutting, puncturing and abrasion. Wooden boxes may be stacked without special braces and cars or trucks may be completely filled. Warehouse charges, usually figured on the basis of floor space occupied, can frequently be cut by high piling, without danger of damage to contents in containers in lower tiers.

Wooden boxes provide a difficult barrier for sneak thieves and offer protection against rodent attack. Not being affected readily by moisture or humidity changes, wooden boxes, when properly packed, often protect their contents from rain or snow for considerable periods.

Plywood Boxes

The thickness of material does not alone determine strength. Plywood is an improvement upon nature—made by the gluing together and crossing of the grains of two or more pieces of thin wood, called veneer. Plywood, weight for weight, is stronger than other materials and this light, strong material is reinforced with sawed lumber cleats in a number of ways to produce the standard styles illustrated. For many uses, special styles are needed and these are scientifically designed to meet conditions. Each commodity presents a separate problem, so that various thicknesses of plywood and sizes of cleats are used. Often, unless shipping experience is available, laboratory or other tests to determine correct construction are necessary.



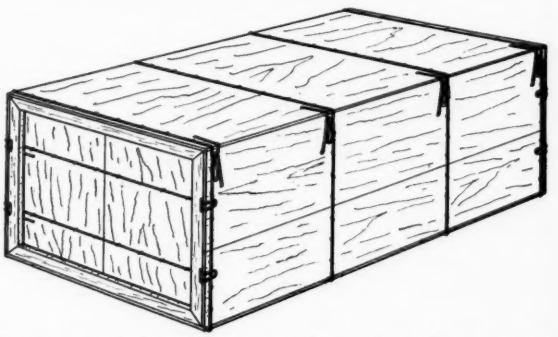
1. Typical plywood box construction. There are a number of plywood styles, varying with the nature of the load, the weight per package and the hazards of transportation. Illustration courtesy Atlas Plywood Corp.

Plywood box parts are all one-piece, this being one of the factors accounting for the great strength, the light weight and the protection against dirt and pilferage, making assembly of the shooks very simple and economical and insuring that all shooks received can be assembled without loss, there being no parts that can become separated.

For many commodities, internal bracing is necessary and the one-piece construction of plywood boxes is such as to add strength to this bracing and often makes possible a simplification not attainable where like rigidity is not supplied.

Thickness of plywood used varies from $^{3}/_{24}$ in. to $^{5}/_{16}$ in. in 3-ply and, for very heavy or export work, 5-ply as thick as $^{1}/_{2}$ in. is at times used. The cleats most generally used are $1^{1}/_{2}$ in., 2 in. and $2^{1}/_{2}$ in. in width and $^{5}/_{8}$ in. or $^{13}/_{16}$ in. in thickness.

Sizes range from those made to carry very small articles to those 200 in. or more in length, many of which carry extraordinary weights.



2. Typical wirebound box—one of a number of constructions utilized widely in fruit and vegetable shipping as well as in many other industries. Illustration courtesy 4-One Box Machine Makers.

Wirebound Boxes

Wirebound boxes are light-weight, wooden shipping containers, reinforced by steel wires securely stapled to four of the surfaces—the sides, top and bottom. The wooden parts are made thick enough to provide the necessary resistance to crushing, puncture and moisture and thin enough to spring under shock and transmit the stresses to the steel wire framework. The fundamental principle underlying the construction of these boxes is that strength from steel wire costs less than strength from wood. The substitution of wire for wood results in lower tare weights, box cost and freight charges.

An outstanding development in this type of container is the All-Bound Box, which has binding wires stapled to all six surfaces—a 50 per cent increase—and is closed with Rock Fastener closures. These boxes are delivered all in one piece, knocked down, instead of three pieces. Only a fraction of the space is required as for set-up boxes. They are easily set-up by hand, by one man, at rates of from 100 to 150 boxes per hour. Rock Fastener closures are interlocking loops with ends turned back, driven through the wood and clinched, which simplify the closing. One man will be able to close from 100 to 150 boxes per hour.

Commodities of almost every character are being carried in such boxes, weights varying from a few pounds to a ton. The boxes can be printed attractively on any or all faces, in one or two colors.

We are indebted to Nathan Tufts, vice-president of The New England Box Co., for the information on sawn wooden boxes contained above; to R. D. Magill, secretary of the Plywood Package Institute, for information on plywood boxes and to E. A. Srill, vice-president of 4-One Box Machine Makers, for information on wirebound boxes.

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Protective Paddings and Cushions

by FRANK L. BLAKE

Crepe wadding, as the name implies, is a highly resilient, protective packing material. It is available in sheets and rolls, in many thicknesses and sizes, to meet varied needs. It is supplied plain or with various backing papers. By the use of various types of embossing, a wide range of decorative or utilitarian effects is achieved. Both highly absorbent or moisture-resistant forms are available, to meet the requirements of certain types of products.

Cushioning protection: Because of its inherent resiliency, crepe wadding is used as cushion packing for the shipment of innumerable fragile items—pharmaceuticals, cosmetics, scientific instruments, radio tubes, etc. While the primary reason inducing its use in such instances is the material's cushioning quality, its fine appearance as a portion of the package and its ability to be tied in with the general package design—by color or by embossing—undoubtedly play a large part in inducing its choice over possible alternative cushioning materials.

Protection finishes: Its extremely soft surface, its laminated crepe structure, which absorbs vibration internally, and its freedom from harsh foreign matter, have made wadding the most favored protection for fine finishes on wood or metal products or packages. Thus, in addition to radio cabinets, refrigerator cabinets and all types of furniture, many fine wooden boxes, polished metal containers and similar re-use packages are shipped with the protection of crepe wadding.

Parcel Post shipments: In the shipment of liquids or easily liquefiable materials, the Postal Regulations are easily complied with when crepe wadding is used, because of the material's high capacity for, and rapid rate of, moisture absorption. Crepe wadding will absorb sixteen times its own weight in moisture. In respect to both Parcel Post and freight shipments, these materials boast a fine record in the elimination of costly damage claims, due to the combination of their cushioning action (preventing breakages) and their moisture-absorbing action (preventing damage to adjacent products, containers, etc., in the event of breakage).

Box top padding: A special form of crepe wadding, available in various thicknesses, paper-backed and ready for use, is manufactured for box top padding and for other padding purposes.

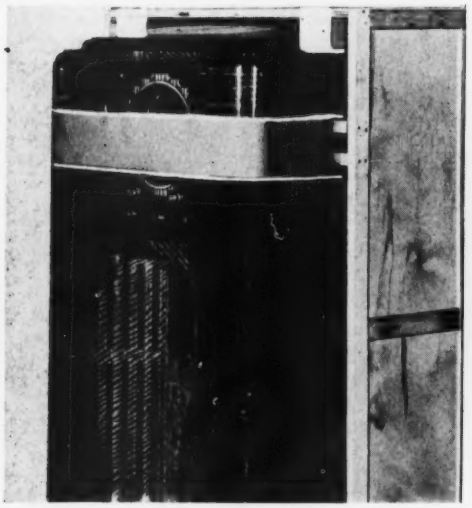
Crepe wadding lined paper is used as a protective wrapping in the form of bags or cut-to-size sheets. The soft lining absorbs shipping shocks. Anti-tarnish varieties of crepe wadding paper are available, being completely free from sulphur and other tarnishing agents.

*Kimberly-Clark Corp.

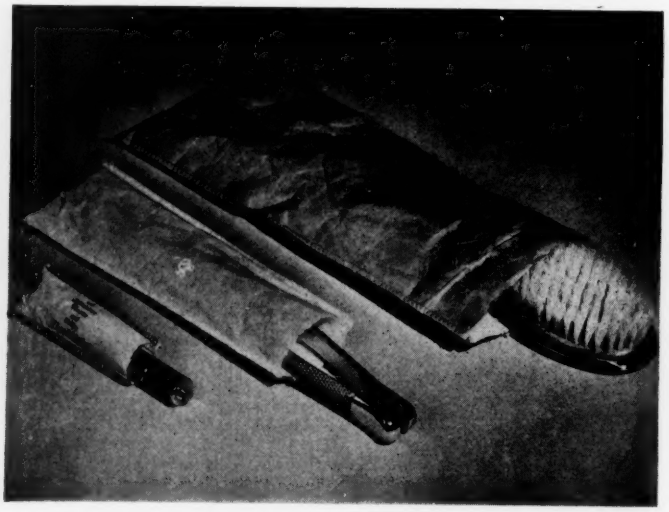


1

2



3



1. Crepe wadding used as protective package pad. **2.** Crepe wadding for furniture packing. **3.** Cotton-lined paper sewn into protective bags. Photo courtesy Cottonluxe Manufacturing Co.

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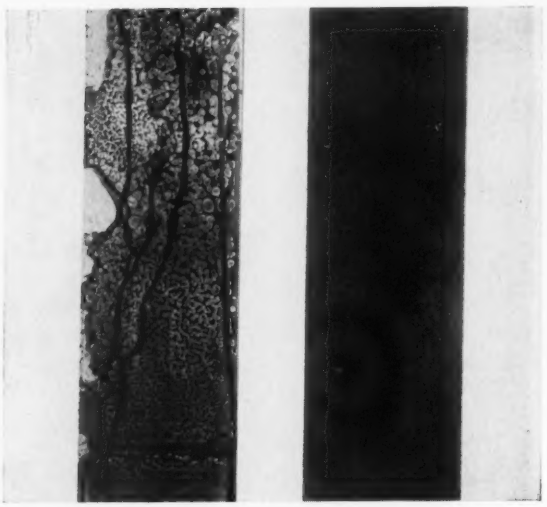
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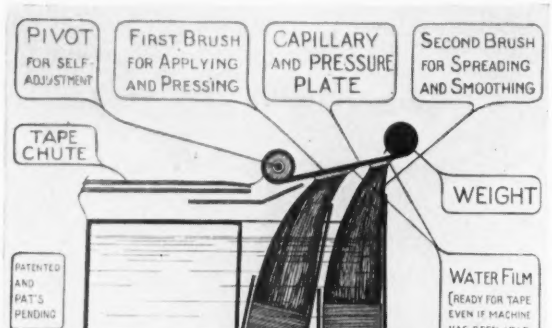
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Tape Sealing Shipments

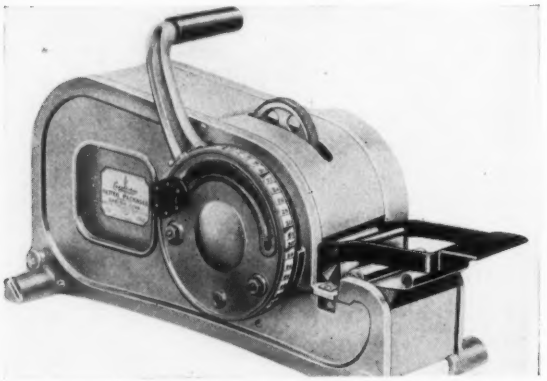
by J. D. MALCOLMSON*



1. Poor moistening (left) contrasted with good moistening.



2. Diagram showing moistening-control unit.



3. Tape sealer for mixed shipments, for general shipping room use. Takes tape 1 in. to 3 in. wide; dispenses up to 30-in. strips with one handle stroke.

Sealing a fibreboard container with gummed tape is not a hit or miss proposition. The correct method is the result of considerable research and experience, but even so is much simpler than some of the amateur methods sometimes used. Briefly, it all boils down to these five points:

1. Learn the railroad, express and parcel post regulations.
2. Use a good grade of gummed tape.
3. Moisten it thoroughly and adequately.
4. Apply it where it will do the most good with the least tape.
5. Get contact—everywhere—between the tape and the box and maintain contact until glue sets.

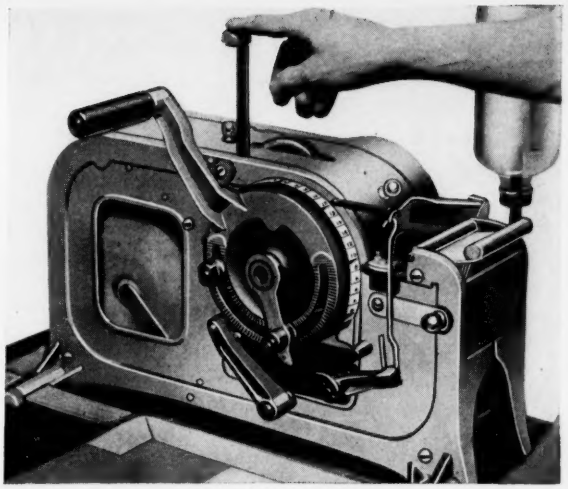
Rules and Regulations

Freight: The principal regulations are covered by Section 4(a), Rule 41 of the Consolidated Freight Classification. These call for 60 lb. kraft paper testing not less than 60 lb. Mullen or Cady. The tape must be at least two inches wide and must cover all seams of boxes and lap $2\frac{1}{2}$ in. or more over the sides and ends of the box and must be *firmly glued* to all surfaces with which it comes in contact. The strips at the top and bottom of the end panels need not overlap. This refers mostly to slotted cartons. Other paragraphs in Section 4 describe tape sealing for other styles of boxes.

Express: These requirements will be found in Rule 18(t) of the Official Express Classification. They are the same as for freight, except that the amount of tape to be used varies depending upon whether the inner flaps are more or less than six inches apart. (This reference to inner flaps used to be included in the freight requirements but was dropped some time ago.) Until recently, the express rule also called for a reinforcing cross strip across the center of the top and bottom on certain boxes, but Supplement 11 did away with this cross strip.

Parcel Post: While no tape sealing specifications are issued, the Post Office has ruled that domestic third or fourth class (parcel post) merchandise may be enclosed in sealed parcels bearing printed labels (not rubber stamps) which show the nature of the contents and name of the manufacturer, producer or shipper, and are endorsed "Postmaster—This parcel may be opened for postal inspection if necessary," or words to that effect.

* Container Division, Robert Gair Co., Inc.



4. Repeater sealer for runs of same sized cartons. May be set to measure any two strips up to 50 ft. in length. Handles tape from 1 in. to 4 in. wide.

This notice may appear on your address label, or on a separate label, or, better still, may be printed on the gummed tape with which the package is sealed. The name and address of the shipper must also appear.

It will be noticed that all these regulations call for paper sealing tape—not cloth. This didn't just happen so. Cloth tape would make a stronger seal, but years ago the carriers learned that a thief could strip off a piece of cloth tape, remove part of the contents and reseal with another piece of tape without tearing either the tape or the box or both.

Certain dangerous articles, such as insecticides and other powdered poisonous articles, which come under The Bureau of Explosives, are required to be sealed with gummed cloth tape when packed in corrugated and solid fibre boxes. Cloth tape is also used by the box manufacturers in joining the fourth vertical corner of a slotted carton. Sometimes this is clay filled cambric, sometimes "duplex" consisting of cloth and paper and sometimes "asphalt" tape where water-proof and odorless asphaltum is used as the duplexing adhesive.

Asphalt has certain objections which have been avoided by an interesting grade of tape just developed wherein a creped kraft paper is duplexed with a colorless water-proofing adhesive. The creping makes for great flexibility and the tape has strings buried in the crosswise direction, making it almost impossible to tear.

Paper and Glue

Gummed paper sealing tape is usually made of kraft paper gummed with a good grade of animal glue. Like everything else, there is good gummed tape and cheap gummed tape. The total difference in cost between the best and the cheapest, when applied to one sealed passage is almost infinitesimal. The quality of the kraft paper may be judged by weighing, calipering, tearing and tensile tests. The glue is more difficult to evaluate and must be judged by the reputation of the tape maker and by its ability to moisten quickly and evenly and set quickly and efficiently. Hide glue has great strength, while bone glue lends setting speed. For this reason, bone glue is usually used plus a little hide glue for additional holding strength, plus certain chemicals for increasing flexibility and deodorizing.

Tape made with cheap glue may seal all right, but after a while the dried glue may crystallize and the tape will then come loose.

In an effort to standardize the minimum qualities of gummed tape, the Department of Commerce, in cooperation with the gummed tape industry, has developed Simplified Practice Recommendation No. R 114-30 which reduces No. 1 kraft sealing tape to three standard weights—35 lb., 60 lb. and 90 lb. These weights are before gluing.

The bursting test is also 35 lb., 60 lb. and 90 lb., respectively. For the 60-lb. case sealing grade, the tearing test is to be at least 118 Elmendorf units in the machine direction and 140 in the cross direction, while the tensile test (one inch wide) is to be 47 lb. in the machine direction and 27 in the cross direction. Standard roll lengths to be 800 ft. on 35 lb., 600 or 1000 on 60 lb. and 375 on 90 lb. Standard package to be 30 in. long (viz. 15 two-inch rolls) and 16 standard packages to constitute a standard case.

As yet, the Government specifications have not attempted to define the glue nor the adhesive quality. This is because the sticking of glue is a somewhat complicated reaction. Gummed tape does not adhere simply because it is tacky and sticky as does medical adhesive tape. When moisture is applied to the glue surface of a strip of sealing tape, the glue dissolves in the water.

The result is a flowable solution of glue in water and this solution soaks into the surface of the fibreboard box to which the tape has been applied. Then the water evaporates and the glue remains. Thus thousands of tiny fingers or anchors of dried glue are hooked under the fibres of the board.

Obviously, the coating of moisture applied to the glue surface must be sufficient to thoroughly dissolve the glue, and the glue itself must be of a good enough grade to go into immediate solution in ordinary water at room temperature. In other words, a flowable solution must be produced almost instantly. Insufficient moistening will make the glue tacky and sticky but will not carry the glue solution down into the surface to be sealed. Tape moistened with only a thin coating of water will invite the water to contract into insolated patches and, while such tape may stick quickly, it will not hold, especially after drying. Imperfect adhesion and blisters are the inevitable result.

If, on the other hand, too much water is used, or if the moistening act is too long prolonged (as in completely

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immersing the tape in a pan of water), the easily soluble glue may be washed away or else the glue will not have a chance to dry during the normal rubbing period.

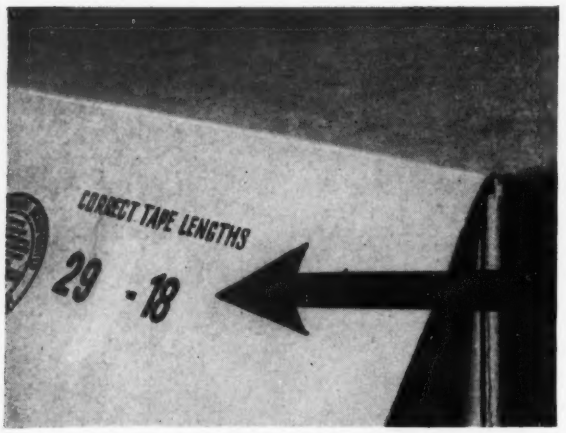
These thoughts have led many inventors to develop a tape which will combine the stickiness of a thin coating of moisture with the holding power of a heavy coating of moisture. This apparent paradox has been successfully accomplished by grooving the glue—either in straight parallel lines or in zig-zag designs. Such glues also aid moistening by presenting a larger surface to the water, thus softening quicker and more thoroughly. The grooves also permit the escape of air which otherwise might be trapped in blisters when the tape is being rubbed down.

Other glues are "cracked" to increase water absorption and flexibility. After tape has been glued by the manufacturer, it is dried on steam heated drier rolls. This bakes the glue to a hard, smooth, glassy surface which tends to shrink one side of the paper, resulting in curled edges and stiff tape. Some manufacturers therefore process the tape at this point by breaking the glue surface into millions of fine, hairline cracks. These make the tape soft and pliable, reduce curl and speed up moistening and application.

Because of the presence of this glue, reasonable care should be taken in the storage of gummed tape. Supplies should be kept in the original package in a cool, dry room, away from steam pipes and radiators. When first brought indoors in the wintertime, it should be allowed to season a few days before use, as cold glue dissolves at a slower rate. Warm weather, or water with a little vinegar added will speed up the moistening.

Moistening

In the early days, moistening meant just that—wetting the glue with the easiest method at hand. Some drew the tape over a wet sponge. This not only resulted in insufficient water, but also tended to transfer the glue to the sponge which, in a short time, became caked and worthless. Others dipped the tape into a pan of water, which provided too much water and greatly delayed the setting time. Another way was to lay the tape upside down and pass a wet cloth or sponge over the glue with a slow, mussy operation as a result.



5. Proper tape lengths indicated on a shipping container.

To fill these needs, mechanical moisteners were developed and these have rapidly progressed from the crude earlier designs to the efficient, practical models now available. These various styles can be divided into three general classes—the felt pad, the roller type and the brush moistener.

The felt pad type is least efficient, as it delivers too little water not well enough distributed and also has a tendency to rub some of the glue off the tape.

The roller type is better, as it delivers more water and is extremely simple to operate and maintain, besides being very inexpensive. It has the disadvantage of often applying the water in irregular areas and this is aggravated by variations in speed of withdrawing.

The brush type is the latest design of moistener and its development grew out of a need for a method of applying adequate water without skipping some areas and without wiping the glue off the tape. The brush is upside down and the only attention necessary is to see that there is always a full level of water in the fountain and to replace the brush before it wears too thin. The latest improved designs have two brushes in tandem which increases efficiency, especially at high speeds.

Modern moisteners come in a great many designs, both automatic and "hand-pull." Some can be adjusted to deliver predetermined lengths of tape, cut accurately and moistened. Others include a simple scale enabling the operator to withdraw the correct length each time, even though each consecutive piece is desired of a different length. Some models will slit the tape into two widths in the delivery action. Often one pull of the handle moistens the tape, cuts it off and delivers it—the cutting being effected by the return stroke of the handle. In spite of this complicated action, modern design has resulted in very compact, attractive models which can be re-loaded in two seconds and which have a self-sharpening cut-off knife.

In selecting a moistener from all these models, the following suggestions may be helpful:

(a) Small automatic—measures and cuts a specified length strip in one operation. Adaptable for small package sealing using 35-lb., 500-ft. rolls from $^3/_4$ in. to $1^1/_2$ in. wide with glue outside.

(b) Small hand-pull type—for 35-lb., 800-ft. rolls (glue inside). Tape width $^3/_4$ in. to $1^1/_2$ in. For general package sealing.

(c) Large semi-automatic—for carton sealing and medium sized shipping departments. Ejects a measured strip which is cut off with hand operated knife. Uses 60-lb., 600-ft. rolls from 2 in. to 4 in. in width.



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(d) Large automatic. Ejects and cuts measured strips in one operation. Uses 60-lb., 600-ft. rolls 2 in. to 4 in. wide.

(e) Large hand-pull type—a serviceable machine for intermittent use, especially on large packages.

(f) There are also available complicated and expensive machines for special purposes. One of these automatically attaches gummed tape to a packed slotted carton. Another holds, under pressure, the two halves of a full telescope container while a 4-in. wide piece of gummed tape is wrapped all around the four sides of the joint.

Avoiding Tape Waste

Many shipping departments look on sealing tape as a minor item which costs little or nothing and which can, therefore, be used without regard to expense. Others seem to feel that the more tape used, the safer the outgoing package. A brief consideration of the function of sealing tape should show that the only place where tape is working for you on a fibreboard box is at the seams or joints. Two and a half or three inches overlap down the side simply anchors the tape which is reinforcing the seam above.

If this overlap is properly adhered, another foot of tape won't make this seam any stronger. The top or bottom seam, where the outer flaps meet, should be sealed with a strip lengthwise over this seam. Criss-crossing 2-in. tape over this seam is wasteful as only the 2-in. width *at* the seam is doing any good.

One shipper sealing only 200 cases a day saved $435 a year by cutting the overlap back to three inches. He was easily justified in installing a fixed length moistener. Of course, if tape is being applied with blisters and loose spots, you may need this extra tape to compensate and hold the tape in place.

Another disadvantage of extra long overlaps is that they hide the printing on the box and, moreover, gummed tape does not stick well on printer's ink. In designing printing copy, why not allow three inches for the tape, if you seal with tape? This not only leaves the copy visible but serves to remind the operator to watch his cut-off length.

When sealing the flaps of a slotted carton it is better to first fold the outer flaps partly inward. This takes out the spring which otherwise might cause the wet tape to slip. Hold the flaps in place while the tape is setting by placing a weight on them, or even by pressing with the hands while rubbing out any trapped air. Printed tape is economical advertising and also discourages pilfering. Colored tape to match the box improves the looks of the package.

In sealing corrugated containers made of dry finish kraft, special attention must be given to the glue and moistening. This is because the rough, porous surface of this board has a very different action on the wet gummed tape than is the case with a smooth, dense surface. Most of the leading manufacturers of tape and moistening machines have made a study of these differences and are prepared to recommend the best methods of taping both rough and smooth finish boxes.

Speed of Taping

As previously stated, high-speed taping is important during afternoon rush hours in shipping-rooms. This depends entirely on the sealing-machine. There are a number of machines which dispense tape at high speeds and which have automatic moistening-control units. The operator draws a handle forward, thereby moistening and automatically cutting off measured lengths of tape. The so-called *repeater sealers* can be set to measure the same length of strip repeatedly. The so-called two-length repeaters can be set to feed a long length and a short length at the will of the operator. These repeaters always give the same length or lengths until reset for different lengths. They are, therefore, useful only for production sealing, which means runs of the same size cartons.

The *mixed-shipment sealers* are for the ordinary shipping-room packing-bench where no two boxes or packages are the same size and where each package requires a different length of tape. These mixed sealers are, therefore, equipped with visual scales or dials. A pointer moving along the scale shows the operator how much tape has been fed at any instant, and when he reaches the desired length he releases the handle.

In order to get the maximum efficiency from either of these measuring sealers, the correct tape-lengths should be printed by the box-maker on the box at the time when the box is being made. This costs practically nothing, since the box-maker has to imprint each box anyway.

The *proper way of applying* the tape is important, since the tape acts not merely as a closure, but as an armor for the edges of the box and helps to hold it square and rigid. The accompanying diagrams show the proper way of applying the tape to a standard shipping-case.

Many shippers do not know how to apply tape correctly to paper-wrapped packages so as to give the package maximum strength. The four illustrations on page 520 show how this should be done. Please note particularly the strip of tape in the third illustration. The inside strip strengthens the package. By applying one long strip, as shown in the second step, instead of three short ones, considerable time is saved and a neater package results. Some packers lay this long tape-strip gum up on the packing table, and lay the edge of the wrapping sheet onto it. In this way they insure each side of the tape-strip doing its own job. Good, heavy wrapping paper should be used on taped packages. If the contents are very heavy, a double thickness of wrapping sheet is an economy that should not be overlooked.

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TRANSPARENT CONTAINERS AND DISPLAYS

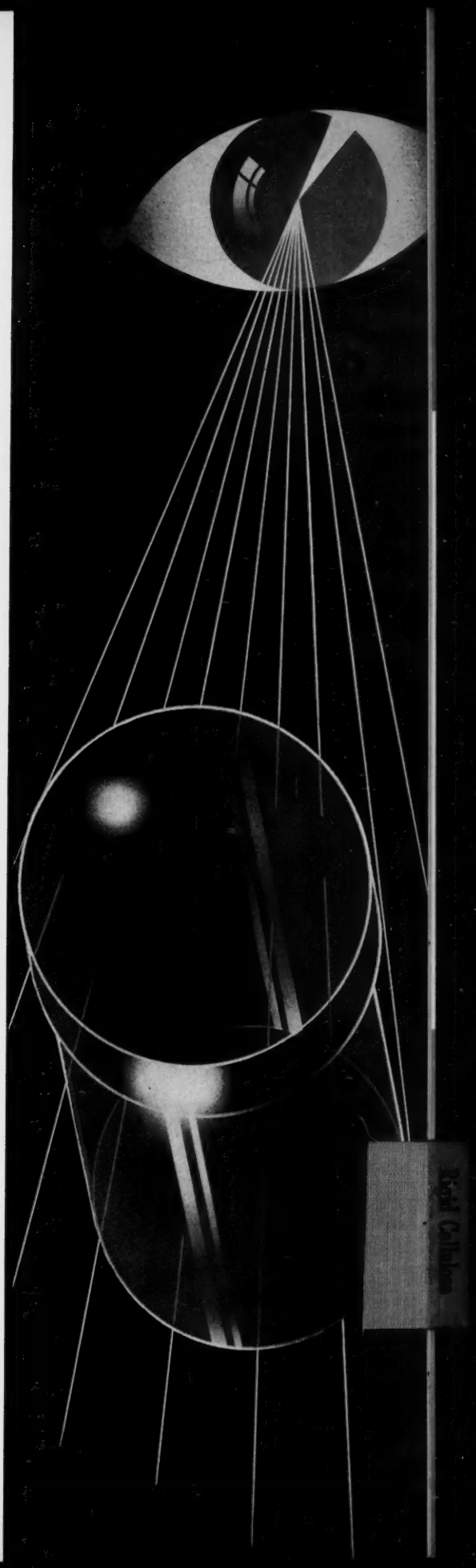
SECTION THIRTEEN

Pages 479 to 496

RIGID TRANSPARENT CONTAINERS

CELLULOSE DERIVATIVE CONTAINERS

RIGID TRANSPARENT CELLULOSE DISPLAYS



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Rigid Transparent Containers

The advantages to be gained by transparency have always attracted packagers and those interested in the development of new packaging materials. Thus, package development has had several widely separated periods which have been marked by a transition from opaque to transparent packages. In the liquor industry, the old brown jug was replaced by the glass bottle, which demonstrated the color and "bead" of its contents to the potential consumer. In more recent years, literally thousands of wrapped products shed their coverings in favor of cellulose wrappings. Finally, largely within the last few years, there appeared practical, rigid transparent cellulose containers which, in many instances, have replaced the paper box, tin can, paper can, and even the metal collapsible tube.

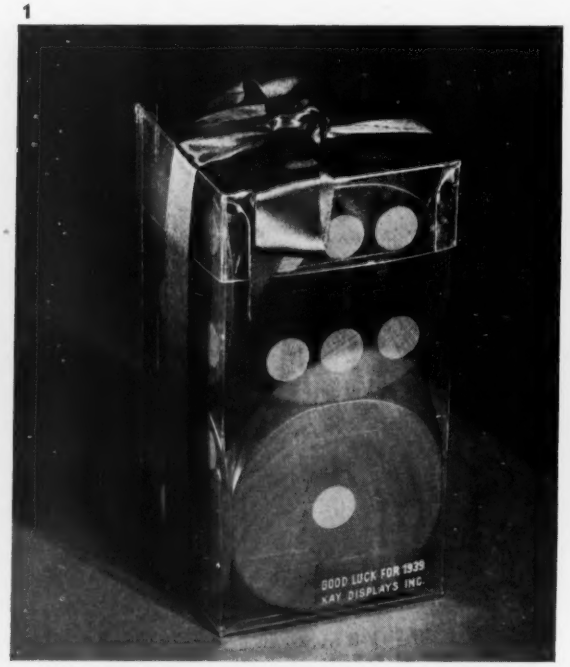
The main reason which led to the development and introduction of containers of these types was, of course, the search for a sturdier yet transparent housing for products best sold on their visual appearance. Thus, while a good deal of competition has existed between transparent containers and standard varieties of opaque containers, a large part of the volume in the transparent field has been built around products formerly left completely unwrapped or merely wrapped for convenience in shipment and intended to be unwrapped for store display. Thus, transparent rigid containers are widely used for hats, shoes, flowers, scarfs, gloves, collars, umbrellas, and similar items.

With the development of these containers, they were soon found to possess advantages in addition to transparency which further served as contributing factors towards their choice. In the field of sampling, rigid transparent vials and jars are used because of their superior resistance to breakage and their light shipping weight. Rigid transparent boxes are often specified because they permit better window display, prevent the handling of merchandise, or permit easier identification on shelves of the store or in household closets.

A primary consideration, when the use of a transparent package is contemplated, revolves around the question whether the product will benefit by full visibility. If it is a product ready for use, colorful and attractive in appearance, and of a nature that is self-explanatory, the rigid transparent container may well serve to increase display and sales. If, on the other hand, the product is one which must undergo some household processing prior to use, or one which is of a nondescript or unattractive appearance, manufacturers

1. Transparent box with slip cover and roll leaf stamped identifying lettering. Courtesy See-Thru Container Corp. **2.** Novelty powder puff package of printed rigid acetate resembling a champagne bottle. Note side seam and bottom cap. Courtesy Celluloid Corp.

1

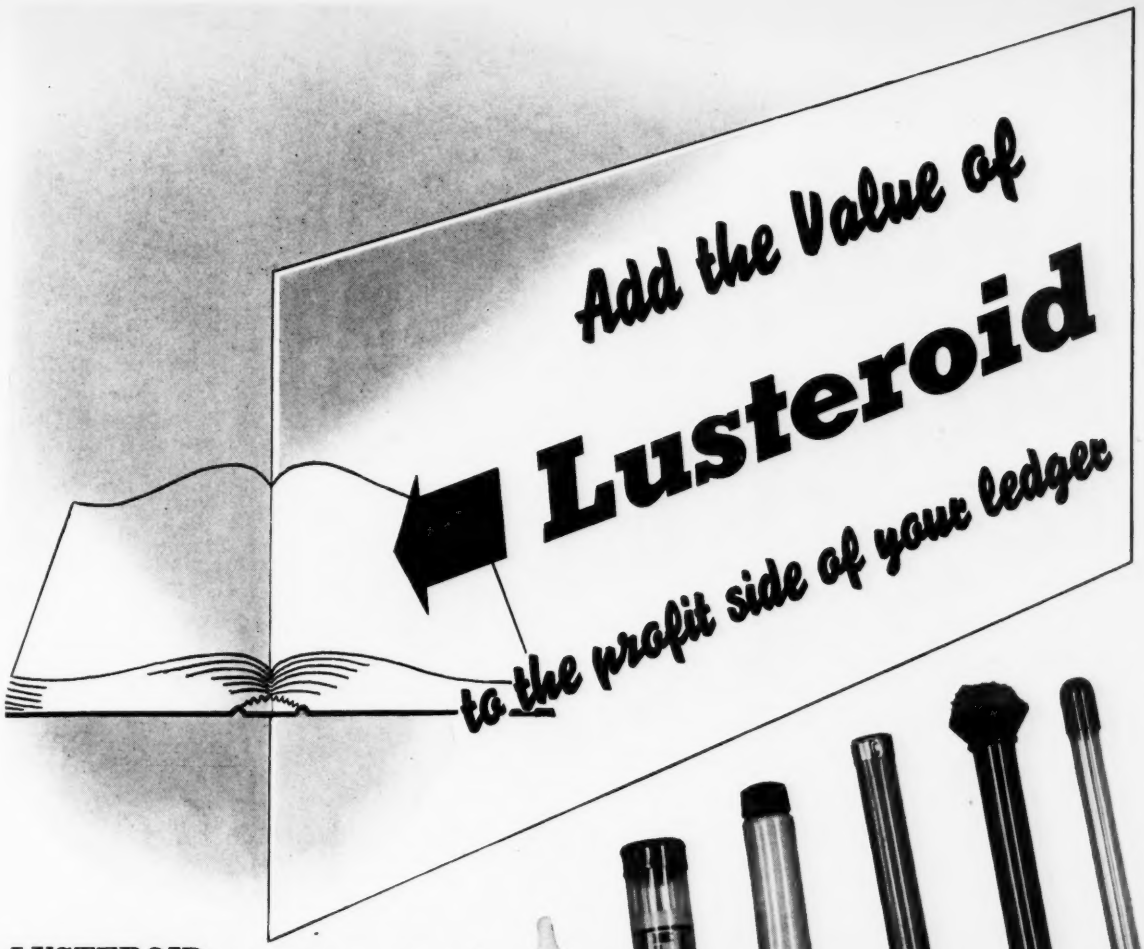


2



Rigid Cellulose

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LUSTEROID rigid cellulose tubes and vials are building sales for a wide variety of products such as drugs (including pills, tablets, powders); cosmetics; and small objects.

BECAUSE: Each LUSTEROID package is individually designed to meet a particular marketing need.

Lusteroid comes in any color you can name.

Lusteroid is either transparent or opaque as your product may require.

Lusteroid is pleasant to the touch.

Lusteroid packages save money on:

- ★ *Shipping:* because they are approximately 75% lighter than equivalent glass.
- ★ *Packing:* because they require no wadding or filling.
- ★ *Breakage:* because they are unbreakable.
- ★ *Labeling:* because multicolor labels are processed directly on the packages as an integral part of their manufacture (no extras for printing, paper and pasting).

Lusteroid's custom package and label design service has developed many unique packages including applicators and packages with applicator tips. Most types of closures can be used with LUSTEROID packages.

Lusteroid makes ideal sample packages as many a happy manufacturer can testify.

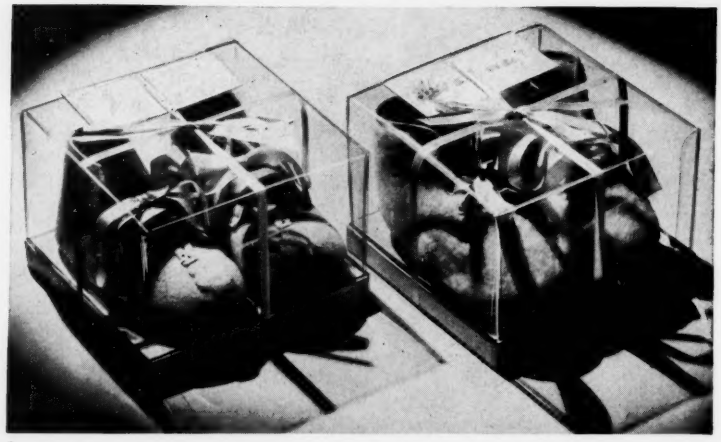


Lusteroid Container Co. Inc.

Formerly LUSTEROID Division of the
Sillcocks-Miller Company—12 Parker Avenue, West
SOUTH ORANGE ● NEW JERSEY



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6

3 Unusual shapes are attainable by drawing and seaming operations. Witness this stocking package in leg shape. Courtesy Celluloid Corp. **4.** Rectangular transparent containers and bases of set-up paper box construction form these display packages for baby shoes. Courtesy Monsanto Chemical Co. **5.** Formed shapes in the background and drawn hoods on round cream jars demonstrate versatility of rigid transparent materials. Courtesy Celluloid Corp. **6.** Comb compact combining drawn and cemented parts. Courtesy E. I. du Pont de Nemours & Co., Inc.

will obviously do well to discard all thought of transparent packaging in favor of the opaque package which permits them to visualize, upon wrap and label, the satisfaction to be gained through the use of the product or its appearance after processing in the home.

Secondary considerations tending to induce the use of rigid transparent cellulose packages are found in the protection they offer the product during demonstration. Consider, for instance, the transparent box used for textiles, where it is desired to demonstrate the texture, color, weave, and design of the article without permitting the prospective customer to handle and, perhaps, soil the merchandise. Again, transparent containers permit easy identification of merchandise in which a wide variety of colors or types are offered as in the case, once again, of textiles. This same quality of making selection easy provides a re-use value for the transparent container which opaque containers do not possess. Women who utilize three or four transparent, or partially transparent, hat-boxes can always instantly tell just where any particular hat may be found, without opening any of the containers unnecessarily.

The rigid transparent cellulose box has, of course, a number of limitations other than its comparatively high cost. To cite a single instance, the manufacturers of hygroscopic products cannot consider these packages because the cellulose-acetate material from which they are made is moisture permeable. Certain types of hard candies will rapidly become sticky if packed in an ordinary rigid transparent cellulose container. Other products, which contain a moisture of their own which must be retained to keep it salable, are likewise excluded from the group which may use this type of package.

Another limitation is found in the handling and packing of these containers, which must be handled more carefully than ordinary cardboard containers or tubes because of their tendency to become scratched and chafed. In shipping, care must be taken to see that the packages are placed into shipping containers either with soft tissue paper to separate every package wall from friction or packed sufficiently tight to avoid movement.

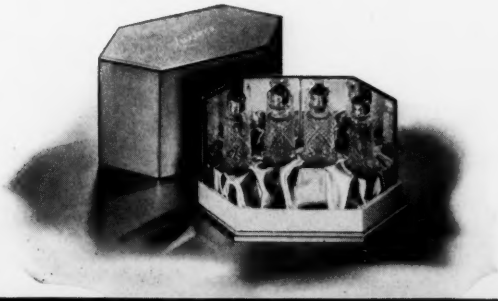
The cellulose acetate materials are rated by the Board of Fire Underwriters as slow-burning materials, requiring no additional insurance coverage or limitations. In

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Ritchie now makes Three kinds of Packages that Sell!

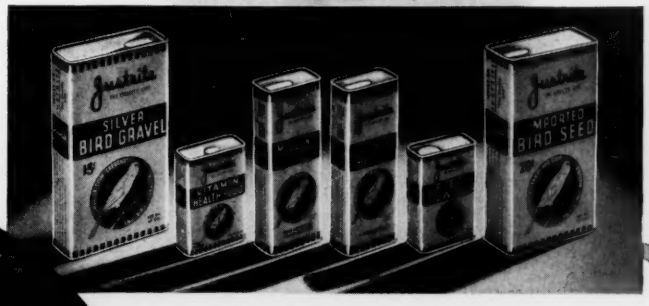
SET-UP PAPER BOXES

Ritchie has probably manufactured more set-up paper boxes than anyone in the field. This current perfume package, illustrating the Ritchie flair for smartness and individuality, helps to tell you why.



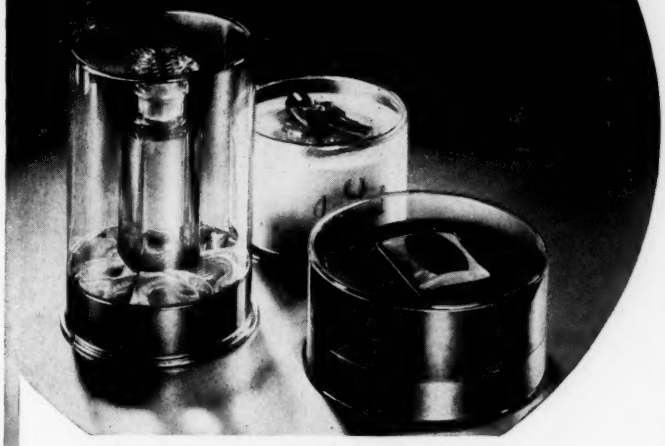
FIBRE CANS

This well-known family of packages is evidence of Ritchie's ability to turn out all types of fibre cans quickly and economically. Ritchie production methods and machines are backed by 73 years of packaging experience.



And Now

TRANSPARENT PACKAGES



GREATER DEALER COOPERATION Learn how your product can command more dealer cooperation and quicker consumer acceptance. Write for samples and complete information about the type of Package by Ritchie that interests you most. Design suggestions submitted without obligation to responsible manufacturers.

FOR THOSE WHO WANT THEIR PRODUCTS SEEN AND SOLD!

Product *visibility* means greater *saleability*. In one of the new transparent packages by Ritchie, your product gets *all* the advantages of the eye-appeal *you've* built into it — *plus* all the extra appeal and protection Ritchie builds into the package! And that means greater display value, for the dealer is more apt to put on his counter the distinctively packaged product that can be seen but not soiled or handled. Here are three such sales-winning transparent packages — a few of the many now coming out of the Ritchie design department. If you'd like to see Ritchie's idea of a transparent package for your product, you've only to ask for it!

W. C. Ritchie AND COMPANY

8861 BALTIMORE AVENUE • CHICAGO

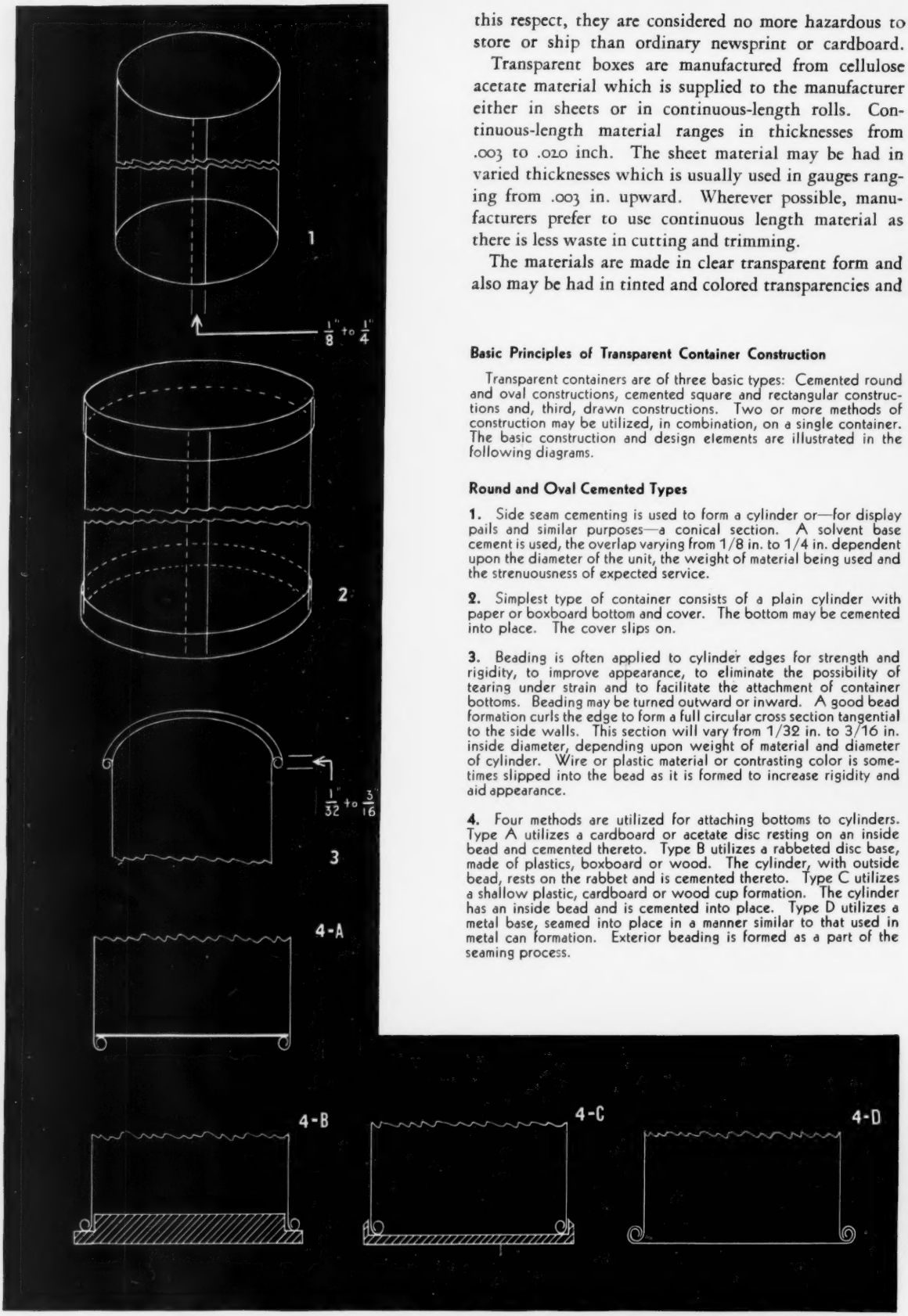
NEW YORK DETROIT CINCINNATI LOS ANGELES ST. LOUIS MINNEAPOLIS DENVER

XUM

this respect, they are considered no more hazardous to store or ship than ordinary newsprint or cardboard.

Transparent boxes are manufactured from cellulose acetate material which is supplied to the manufacturer either in sheets or in continuous-length rolls. Continuous-length material ranges in thicknesses from .003 to .020 inch. The sheet material may be had in varied thicknesses which is usually used in gauges ranging from .003 in. upward. Wherever possible, manufacturers prefer to use continuous length material as there is less waste in cutting and trimming.

The materials are made in clear transparent form and also may be had in tinted and colored transparencies and



Basic Principles of Transparent Container Construction

Transparent containers are of three basic types: Cemented round and oval constructions, cemented square and rectangular constructions and, third, drawn constructions. Two or more methods of construction may be utilized, in combination, on a single container. The basic construction and design elements are illustrated in the following diagrams.

Round and Oval Cemented Types

1. Side seam cementing is used to form a cylinder or—for display pails and similar purposes—a conical section. A solvent base cement is used, the overlap varying from 1/8 in. to 1/4 in. dependent upon the diameter of the unit, the weight of material being used and the strenuousness of expected service.

2. Simplest type of container consists of a plain cylinder with paper or boxboard bottom and cover. The bottom may be cemented into place. The cover slips on.

3. Beading is often applied to cylinder edges for strength and rigidity, to improve appearance, to eliminate the possibility of tearing under strain and to facilitate the attachment of container bottoms. Beading may be turned outward or inward. A good bead formation curls the edge to form a full circular cross section tangential to the side walls. This section will vary from 1/32 in. to 3/16 in. inside diameter, depending upon weight of material and diameter of cylinder. Wire or plastic material or contrasting color is sometimes slipped into the bead as it is formed to increase rigidity and aid appearance.

4. Four methods are utilized for attaching bottoms to cylinders. Type A utilizes a cardboard or acetate disc resting on an inside bead and cemented thereto. Type B utilizes a rabbeted disc base, made of plastics, boxboard or wood. The cylinder, with outside bead, rests on the rabbet and is cemented thereto. Type C utilizes a shallow plastic, cardboard or wood cup formation. The cylinder has an inside bead and is cemented into place. Type D utilizes a metal base, seamed into place in a manner similar to that used in metal can formation. Exterior beading is formed as a part of the seaming process.

XUM

CONTAINERS, [illegible]BES

OF TRANSPARE[illegible]

Clearsite AN[illegible]



AVAILABLE IN ANY [illegible]O[illegible] OF THE SPECTRUM

UNBREAKABLE • SEAMLESS • 80% LIGHTER THAN GLASS

Put your product in a package that says "Here... try me!" A package that is as colorful as you care to make it (no limit to the range of color or combinations of color, including metallics) . . . a package that will not break or crack . . . a package that is 80% lighter than glass providing important savings in shipping and packaging costs . . . a package that has its label applied directly to the container during manufacture producing a permanent, brilliant, lasting, high gloss effect.

Our packaging experts will gladly consult with you on your packaging problems, and provide you with samples, quotations, etc.—all without obligation. Drop us a line or phone.

HYCOLOID • NEOCELL
CLEARSITE

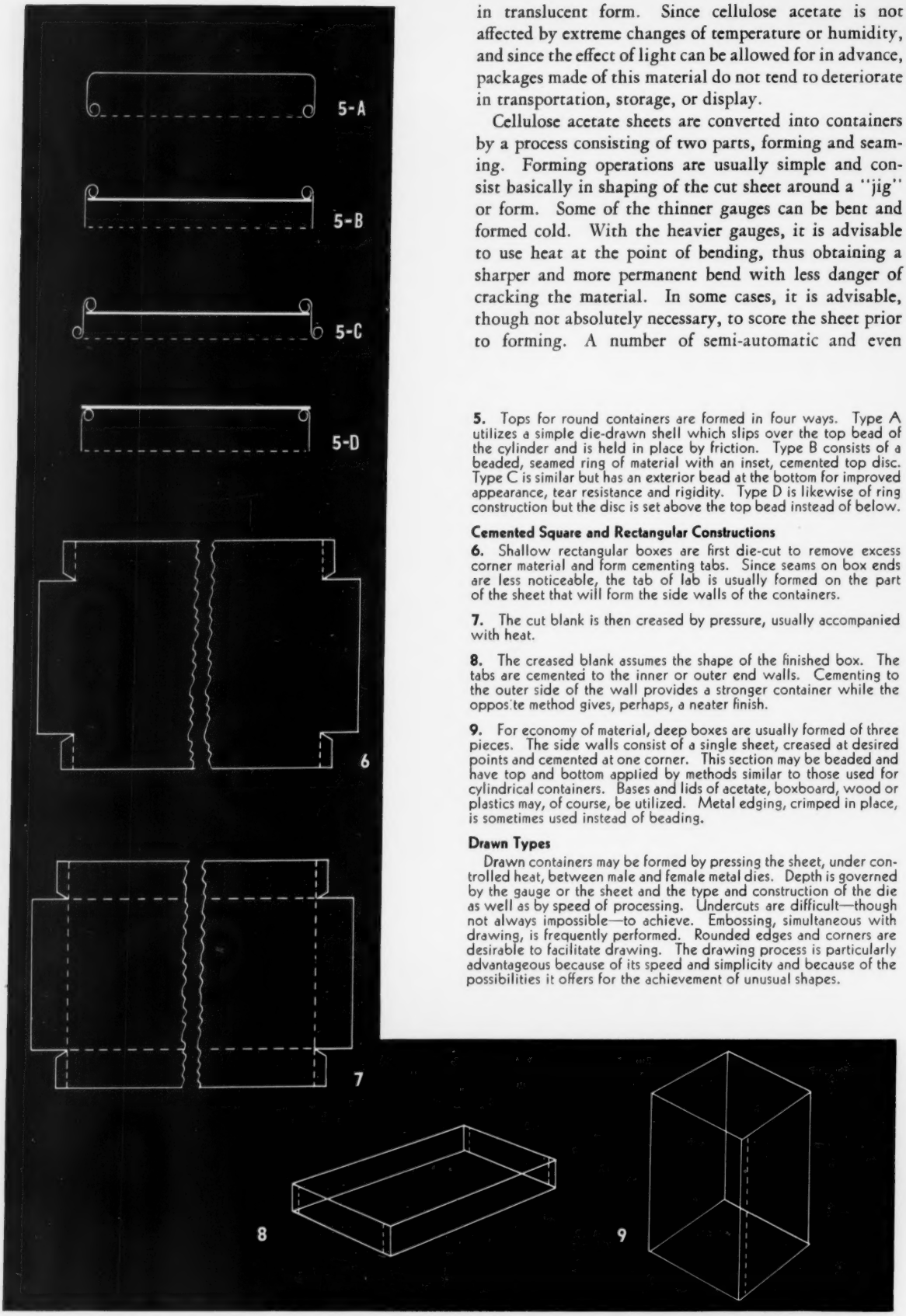
Hygienic **TUBE & CONTAINER CORP.**

EXECUTIVE OFFICES AND FACTORY: 50 AVENUE L, NEWARK, N. J.

N. Y. Sales Office: 626 Fifth Avenue, New York, Tel: CI 6-2425

in translucent form. Since cellulose acetate is not affected by extreme changes of temperature or humidity, and since the effect of light can be allowed for in advance, packages made of this material do not tend to deteriorate in transportation, storage, or display.

Cellulose acetate sheets are converted into containers by a process consisting of two parts, forming and seaming. Forming operations are usually simple and consist basically in shaping of the cut sheet around a "jig" or form. Some of the thinner gauges can be bent and formed cold. With the heavier gauges, it is advisable to use heat at the point of bending, thus obtaining a sharper and more permanent bend with less danger of cracking the material. In some cases, it is advisable, though not absolutely necessary, to score the sheet prior to forming. A number of semi-automatic and even



5. Tops for round containers are formed in four ways. Type A utilizes a simple die-drawn shell which slips over the top bead of the cylinder and is held in place by friction. Type B consists of a beaded, seamed ring of material with an inset, cemented top disc. Type C is similar but has an exterior bead at the bottom for improved appearance, tear resistance and rigidity. Type D is likewise of ring construction but the disc is set above the top bead instead of below.

Cemented Square and Rectangular Constructions

6. Shallow rectangular boxes are first die-cut to remove excess corner material and form cementing tabs. Since seams on box ends are less noticeable, the tab of lab is usually formed on the part of the sheet that will form the side walls of the containers.

7. The cut blank is then creased by pressure, usually accompanied with heat.

8. The creased blank assumes the shape of the finished box. The tabs are cemented to the inner or outer end walls. Cementing to the outer side of the wall provides a stronger container while the opposite method gives, perhaps, a neater finish.

9. For economy of material, deep boxes are usually formed of three pieces. The side walls consist of a single sheet, creased at desired points and cemented at one corner. This section may be beaded and have top and bottom applied by methods similar to those used for cylindrical containers. Bases and lids of acetate, boxboard, wood or plastics may, of course, be utilized. Metal edging, crimped in place, is sometimes used instead of beading.

Drawn Types

Drawn containers may be formed by pressing the sheet, under controlled heat, between male and female metal dies. Depth is governed by the gauge or the sheet and the type and construction of the die as well as by speed of processing. Undercuts are difficult—though not always impossible—to achieve. Embossing, simultaneous with drawing, is frequently performed. Rounded edges and corners are desirable to facilitate drawing. The drawing process is particularly advantageous because of its speed and simplicity and because of the possibilities it offers for the achievement of unusual shapes.

XUM



Rigid Transparent Containers of LUMARITH PROTECTOID

REG. U.S. PAT. OFF.

HERE's display with a capital "D"! Rigid transparent containers of Lumarith Protectoid give every product a showcase of its own—a showcase with full visibility from all angles!

And—these eye-catching containers offer the consumer so many opportunities for re-use that time and again, it's the container itself that swings the sale.

For rigid containers for all sorts of products—from millinery to marbles—Lumarith Protectoid is ideal. It is crystal-clear, permanently transparent. It never shrinks or wrinkles. Never dries out with age. Never warps or buckles or discolors. It is water-proof, grease-proof, and non-inflammable. It is not affected by the dryness of storage, the parching heat of window display, or the rigors of winter weather.

Celluloid Corporation's broad experience in working with transparent containers is yours for the asking. Write *Packaging Division*, Celluloid Corporation, 10 E. 40th Street, New York City. Established 1872. Sole Producer of Celluloid and Lumarith. (Trademarks Reg. U.S. Pat. Off.)

★

If you are working on a transparent or plastic package . . .

Get in touch with CELLULOID also Headquarters for PLASTICS

automatic machines have recently been devised for preforming operations, and it is only a matter of time before this process in transparent-box construction will be as mechanized as processes of paper-box construction.

Seaming can be carried on in a number of ways. The most common is cementing. Special cements are used, which are, in reality, solvents of the cellulose acetate material. Applied to the surfaces which are to be bonded, they soften these surfaces and then evaporate rapidly, producing, in effect, a weld of the two pieces. Other types of cement are available for use in joining cellulose acetate to paper, leather, wood, tin, glass, etc.

Other methods of seaming cellulose acetate include sewing, stitching, and eyeletting. These methods, however, do not provide a sift-proof seam, although they may provide ample sturdiness where the product requires neither air-tightness nor freedom from sifting.

In some cases, seamless containers are made by a process of drawing. Specially designed heated dies are used to draw such items as caps for cylinders and hoods for display packages.

Less expensive transparent boxes, and those of very heavy gauges of material, are made without any special edging. To give rigidity to the box made of lighter weights, a beaded or rolled edge is frequently used. In some cases, a special rim or decorative molded edge is cemented into place to provide both rigidity and eye-appeal. Some companies use constructions involving the use of metal-edging materials on which it is claimed patents are pending.

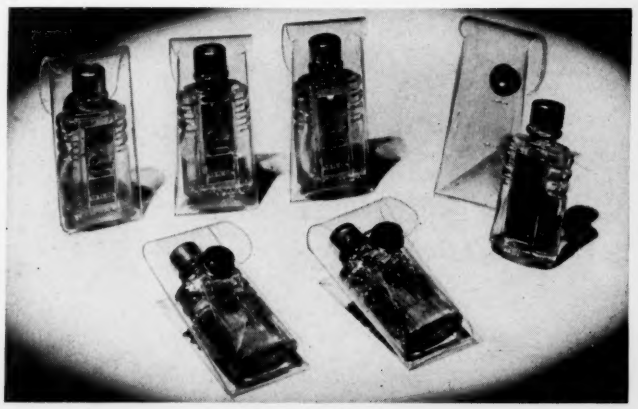
Transparent containers can be decorated by printing, stamping, embossing, or by combining with other materials. There is no practical limitation upon the decoration that may be applied other than that involved in the excessive use of decoration which tends to detract from the main quality of the container—its transparency.

7. Multi-unit products and special sale combinations requiring display benefit particularly when transparency is introduced, as in this instance. Courtesy Monsanto Chemical Co. **8.** Simple staples and button fasteners help convert a single die-cut piece of transparent acetate into these bottle purses. Courtesy Monsanto Chemical Co. **9.** A drawn type paper covered base is topped with an imprinted transparent hood, ribbon tied for greater attractiveness. Courtesy Monsanto Chemical Co. **10.** Three degrees of transparency are here seen—the windowed set-up box, the paper topped cylinder and the full transparent box and cover. Courtesy Celluloid Corp.

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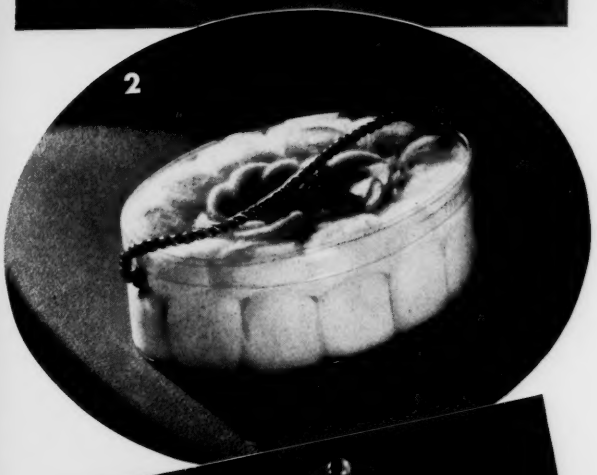

XUM

Let Customers See Your Products

THROUGH

EASTMAN ACETATE SHEET







TRANSPARENT PACKAGES mean increased sales—so many manufacturers have proved it. And *your* transparent packages can have *maximum* eye appeal, if they are made with *Eastman Acetate Sheet.*

Flexible, durable, versatile, *Eastman Acetate Sheet* provides full protection with full display . . . offers the answer to almost every packaging problem. It can be readily molded, drawn, or folded . . . can be combined with other materials, or used alone. It takes printing without wrinkling. Its crystal clarity adds appeal—*sales appeal.*

Generous Working Samples—Free

Eastman Acetate Sheet is supplied in the following thicknesses: .003″, .005″, .0075″, .010″, .015″, and .020″; in standard- and cut-to-size sheets, and in rolls of any convenient length and up to 40″ in width. To fully appreciate the many advantages of this versatile packaging material, write today for generous working samples. . . . Eastman Kodak Company, *Chemical Sales Division,* Rochester, N. Y.

EASTMAN ACETATE SHEET

Appeals — Displays — Sells





1 *Eastman Acetate Sheet* forms most of the cover of this display package . . . a distinctive feature is that it retards tarnishing.

2 This package is made entirely of *Eastman Acetate Sheet,* giving full display to the product.

3 Here *Eastman Acetate Sheet* is combined with bases and tops of metal, cardboard, and wood . . . to give maximum rigidity.

4 "Windows" of *Eastman Acetate Sheet* add effective display and selling value to these cartons.

5 Containers of almost any size are made employing *Eastman Acetate Sheet,* as shown by this matched set.

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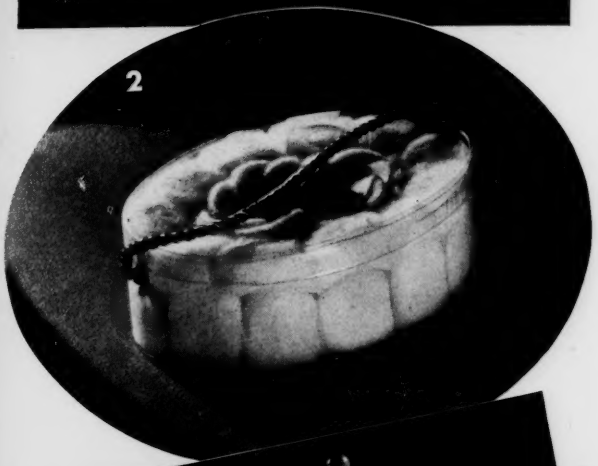
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This insert is a sample of Eastman Acetate Sheet—.010″ thickness

XUM

Cellulose Derivative Containers

Cellulose derivative containers, like the closely related rigid transparent box, are made from cellulose nitrate and acetate materials. They are made in a practically limitless range of colors and shades; clear, tinted, or opaque. Containers are formed or drawn in special processes which produce a seamless shell in an almost limitless number of variations of the basic cylindrical shape. Thus, short, stubby jars, tall thin vials, tubes similar in shape to the metal collapsible tube, shapes similar to glass ampules, and shapes similar to the familiar gelatin capsule, are thoroughly practical.

Containers of this sort are usually "labeled" when made, the lettering and design being processed directly upon the container material and becoming an integral, permanent, fixed part of the package. Since threads can be molded-in in the forming process, screw-type closures are frequently used in conjunction with these containers, the most common being single-shell metal closures and molded caps. Cap-like closures, made in a manner identical to that of the container itself, are likewise frequently used.

Because of their resiliency, these containers resist damage and breakage. This quality, and the light weight and lack of bulk of cellulose derivative containers, have combined to make them extremely desirable in sampling, in the packaging of medicinal and related products, and in the packaging of mail-order items. In the pharmaceutical field, the inertness and sanitary qualities of the cellulose material, of which these containers are made, serve as an inducement to their adaptation.



1



2

1. A group of cellulose derivative vials with integrally formed threads for metal closures. Note various effects achieved by applied decoration. Courtesy Hygienic Tube & Container Corp.

2. A wide range of sizes and shapes is possible. Note open end tube with two closures (second from left) and cellulose derivative closure at extreme right. Courtesy Lusteroid Container Co., Inc.

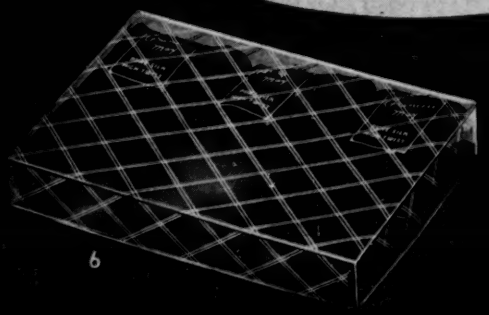


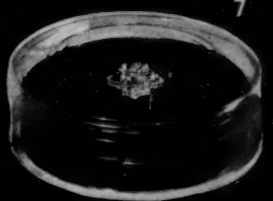












SEE-THRU
your packaging problem

PUT YOUR PRODUCT IN A SEE-THRU CONTAINER

Here's why —

See-Thru developed the rigid transparent container.

See-Thru has more different types of packages available than any other fabricator in the field.

See-Thru packages are more economical because they are produced in volume. And See-Thru has pioneered the use of tools and machinery in the transparent package field.

See-Thru packages are *better* because See-Thru is the only firm whose entire effort and output are devoted to the creation and manufacture of Rigid Transparent Packages and Displays.

N.B. The following packages are available in a complete range of sizes. Used for a wide variety of merchandise.

1. Glamour package No. 1: gilds the lily of an already unusual *eau de cologne* bottle and makes it truly a gift item with a display cover on a cardboard extension box.
2. Glamour package No. 2: or how to put a sheen on a powder puff and give it that extra filip that makes people glad to pay a high price for it. Printed design body and knob on cover.
3. Candy as it should be packaged: so all its color and goodness can be seen; so that the product can sell itself. Straight curl edges.
4. Simple counter display-package that sells individually wrapped portions of chocolate and keeps the merchandise visible and safe. Stapled cardboard bottom and display card.
5. Want to buy a tangerine? If you don't, you will when you see them in this display-package which shows them in all their color, yet protects them with a metal bottom and wire reinforcements.
6. Glamour package No. 3: shows stockings, which can be very prosaic, and makes them mysterious and beautiful with criss-crossed lines on the cover of a transparent, rigid box.
7. Glamour package No. 4: or how to display a compact so that it dazzles the customers' eyes, yet is protected from handling by reinforced cover.

Let us show you the "See-Thru" way of solving your packaging problem. Consultation is offered without obligation.

See-Thru Container Corporation

21-07 40th Avenue **Long Island City, N. Y.**

Note change in address



3. Metal snap-on closures are frequently used. Cellulose derivative containers are also, on occasion, used as package accessories such as the tobacco measuring jug. Photo courtesy Lusteroid Container Co., Inc.



4. Cork closures are occasionally used as in the second vial from the right. Cellulose derivative containers have achieved extremely wide adaptation in packaging for the medical and dental professions. Courtesy Hygienic Tube & Container Corp.

Cellulose derivative containers are produced on specification and thus can be made to embody the constructions meeting the special requirements of each manufacturer without entailing additional expense.

Certain types of cellulose derivative containers offer mechanical advantages unobtainable at present through the use of any other material. Among these is the puffer type, in appearance similar to the standard collapsible tube. These are ideal for the packaging of powders which must be sprayed in use, since the resilient tube acts as a bellows when pressed and after ejecting the spray of powder returns to its original shape.

Collapsible tubes, made by the seamless cellulose process, are widely used for the packing of certain ointments which are not compatible with tin or aluminum. The tubes are also excellent for the packaging of oil or grease base creams and lotions.

Rigid Transparent Cellulose Displays



1

1. Wooden display stand with transparent acetate window. Merchandise is withdrawn through the back. Courtesy Celluloid Corp. 2. Domed display hood sets over merchandise on a wooden base. Courtesy Monsanto Chemical Co.

The same qualities which have led to the use of transparent cellulose acetate sheeting in the packaging field have made these materials desirable as displays. In point of fact, a large number of the packages made of cellulose acetate verge very closely on display form. However, an increasing number of manufacturers have been adopting specially-made displays, utilizing cellu-



2

NOW TRANSPARENT LUXURY PACKAGES AT LOW VOLUME PRICES!

It *had* to come — a way of producing transparent packages at prices to fit normal packaging budgets! The answer is Central States' volume production — bringing to you today the extra sales advantages of transparent packaging *at a price!*

Special machinery, developed by our engineers and used exclusively in our plant, has put rigid, transparent package making on a modern, production-line basis. Fabrication costs have been reduced to a new low for the industry, taking transparent packaging out of the luxury-price class.

Yet these packages have quality equaling, or even exceeding, that found in many high-priced containers. They are made of the best-grade cellulose acetate sheets produced by leading manufacturers of transparent packaging materials. Fabricated by expert craftsmen, they are sturdy and durable.

An Immediate Success

Success of transparent packaging as a merchandising factor is an established fact. It has cut selling costs and increased volume in such widely different fields as hats and candy . . . soaps and shoes . . . cigars and orchids . . . displays and premiums.

Why not test the advantages of transparent packaging on your own product? One of our wide range of stock dies may enable us to produce a package for you in "trial-order" quantities and at prices surprisingly low. Or a custom-built package, to fit your specific need, may be the economical way to increased sales appeal. Write us *today* for all the details of a *prize* package at a *surprise* price!

SHOWBOX

Division of

CENTRAL STATES PAPER AND BAG COMPANY

2600 N. Broadway, St. Louis, Mo.



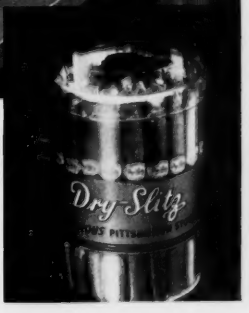
Using modern production-line methods, the Showbox Division of Central States Paper and Bag Company produces quality transparent packages at low, volume prices.



SALES SKYROCKETED when the Busy Bee Candies were packaged in a Central States Showbox.



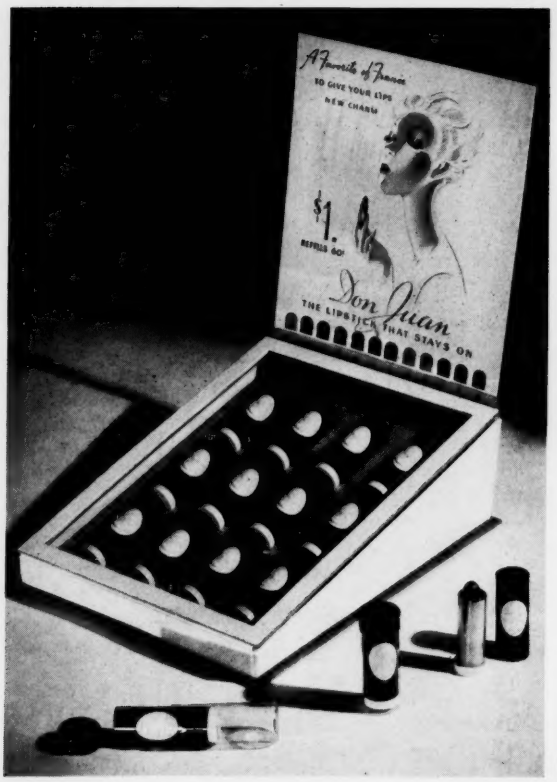
GIFT APPEAL, added by Showboxes, was reflected in increased demand for all International Baby Shoes.



COUNTER-TOP DISPLAY increased substantially when Dry Slitz Stogies were packed in Showboxes.



3



5



4



6

3. Combination package display for military brush set—acetate combined with set-up boxboard. Courtesy Celluloid Corp. **4.** Acetate slip cover and acetate drum with metal base form this display for small products. Courtesy Federal Tin Co. **5.** Counter display of set-up boxboard construction with acetate protective window. Courtesy Celluloid Corp. **6.** Metal illuminated display with drawn acetate hood. Courtesy Monsanto Chemical Co.

lose acetate to achieve increased visibility for their products in conjunction with protection against breakage, handling, spilling, soilage, etc.

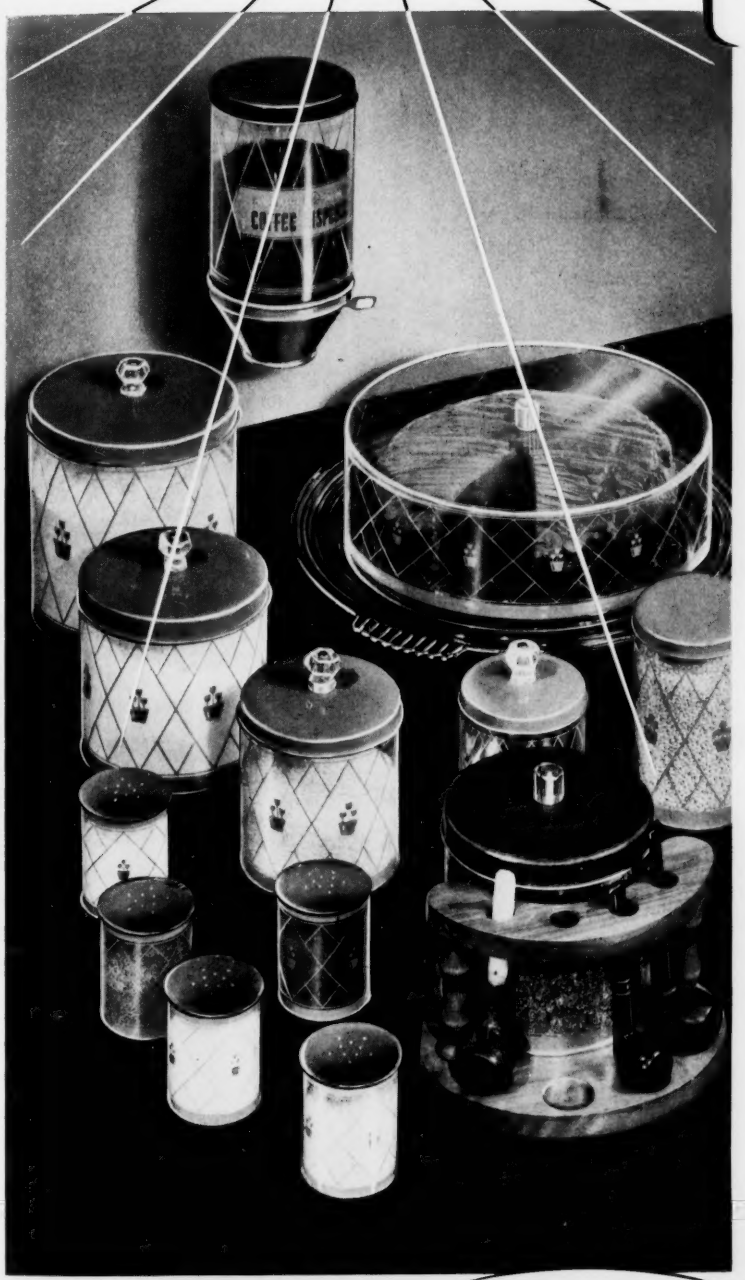
In their simplest forms, these displays take the shape of troughs or pails into which a quantity of the product may be either neatly arranged or thrown in jumbled fashion for mass display. Stitched and stapled boxes of this sort, usually with a back panel of printed or lithographed board, have been widely used by the makers of chewing-gum, roll-packed candies, and small medicinal items such as aspirin. Others have utilized cylindrical or conical pails with cellulose acetate walls and metal bottoms as so-called "catch pennies" to be placed near cash registers on drug, cigar, and variety store counters.

Manufacturers of more expensive merchandise such as perfumes, watches, electric shavers, etc., have found that a display which encloses their product in a transparent hood serves to enhance its appearance while re-

XUM

VUE PAK

1. Displays
2. Protects
3. Adds Re-Use Value



Many a business has packaged its products in "VUEPAK" for visibility alone... then discovered *additional* plus values in the new package. "VUEPAK" is transparent, of course, but too, it produces a package amazingly rigid and sturdy. "VUEPAK" adds to the beauty of the product it contains, to be sure, but also it attracts buyers as a *permanent* container for re-use.

These are the extra values in "VUEPAK" that have contributed to the successful line of containers designed and produced by Transparent Specialties Manufacturing Company of Cleveland. Illustrated at right are a few of these containers... designed to protect as well as display, to have *permanent* value in the home as well as *merchandising* value in the store.

Easily fabricated, and available in any practical weight for packaging or display requirements, "VUEPAK" may add this triple sales appeal to your package at reasonable cost. Full information and names of fabricators supplied promptly on inquiry to MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield, Massachusetts. District Offices: New York, Chicago, Detroit, St. Louis, Los Angeles, Dayton, Montreal.

MONSANTO
PLASTICS
SERVING INDUSTRY...
WHICH SERVES MANKIND

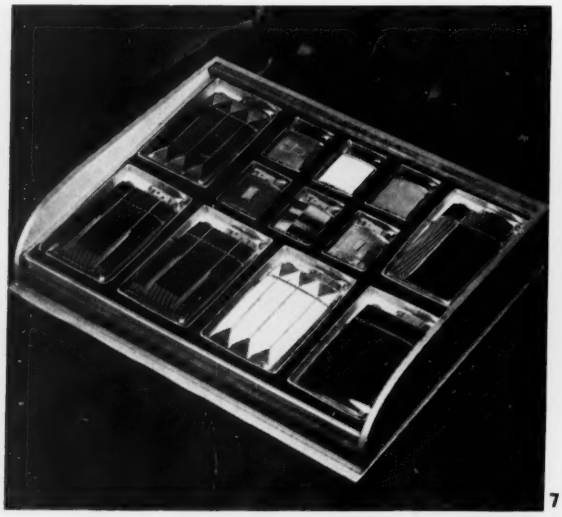


ducing or eliminating the hazards of open display. Such displays are usually constructed with a board, metal, molded, or cast-plastic base, and a hood of transparent material which may be opened or lifted to provide access to the product within.

Recent design trends have been following two divergent courses. In combination with lithographed or printed board, simple units have been created for the merchandising of such "penny catchers" as chewing gum, candies, razor blades, etc. These usually take the form of stapled or cemented square or round baskets, with front and side walls formed of transparent sheeting and bottom and back (including back panel sign) formed of paperboard, suitably printed.

On the other hand, manufacturers of more expensive products have utilized combinations of acetate sheeting and wood, metal or plastics to form what are virtually permanent display cabinets for store counter use in preferred locations. These are miniature equivalents of the old-fashioned glass store counter cabinet, dressed up in streamlined fashion to harmonize with modern store equipment.

7. Counter merchandise display combining boxboard and curved acetate window. Courtesy Celluloid Corp. **8.** Pipe display which combines boxboard and acetate, designed to stand erect on the counter. Courtesy Monsanto Chemical Co. **9.** Pail type decorated acetate display for counter use. Courtesy Monsanto Chemical Co. **10.** Combination wood and acetate display for jewelry presentation. Courtesy Arrow Mfg. Co., Inc.

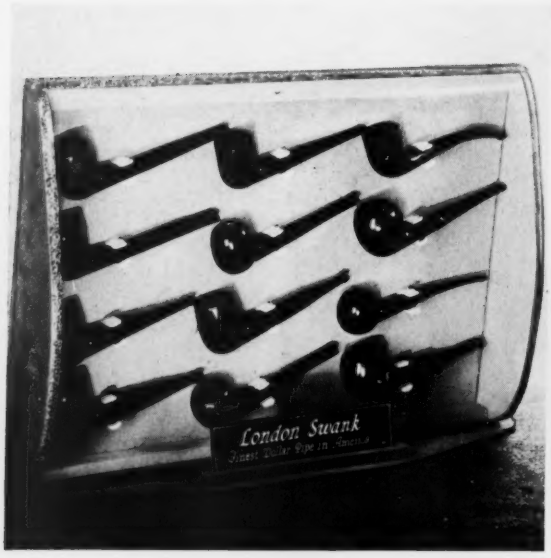


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BUYERS' DIRECTORY of the Packaging Industries

THE BUYERS' DIRECTORY of the PACKAGING INDUSTRIES (pages 497 to 529, incl.) lists all of the manufacturers of materials, supplies and equipment serving the field. These are grouped alphabetically under various headings. Complete addresses can be found in the Alphabetical Index on page 523. Names of advertisers are listed in bold face type. The information included in such listings is authentic to the best of our knowledge, having been supplied by those whose names appear.

ADHESIVES

Arabol Mfg. Co., The
Atlas Powder Co., Zapon Div. and Zapon-Brevolite Div.
Bakelite Corp.
Beetle Products Division of American Cyanamid Co.
Bingham Bros. Co.
Carbide & Carbon Chemicals Corp.
Dennison Mfg. Co.
Dewey & Almy Chemical Co.
du Pont de Nemours & Co., Inc., E. I.
Eastman Kodak Co.
Fales Chemical Co., Inc.
Findley Co., F. G., The
Goodyear Tire & Rubber Co., Inc., The
Graeme Harrison Products, Inc.
Maas & Waldstein Co.
Manhattan Paste & Glue Co.
Midland Glue Products Co.
Monsanto Chemical Co., Merrimac Div.
National Starch Products, Inc.
Paisley Products, Inc.
Philadelphia Quartz Co.
Plaskon Co., Inc.
Reilly Tar & Chemical Corp.
Resinox Corp.
Russia Cement Co.
Ruxton Products, Inc.
Seal, Inc.
Standard-Knapp Corp.
Stein Hall Mfg. Co.
Union Paste Co.
U. S. Rubber Products, Inc.
Williamson Adhesives, Inc.
Williamson Glue & Gum Works, Inc.

ADHESIVES (Cold Water Solubles)

Arabol Mfg. Co., The
Ault & Wiborg Corp.
Beetle Prods. Div. of American Cyanamid Co.
Bingham Bros. Co.
Dennison Mfg. Co.
du Pont de Nemours & Co., Inc., E. I.
Fales Chemical Co., Inc.
Findley Co., The F. G.
Manhattan Paste & Glue Co.
National Starch Products, Inc.
Paisley Products, Inc.
Plaskon Co., Inc.
Russia Cement Co.
Union Paste Co.

ADHESIVES (For Transparent Cellulose)

American Products Mfg. Co.
Arabol Mfg. Co., The
Atlas Powder Co., Zapon Div., and Zapon-Brevolite Div.
Bingham Bros. Co.
Carbide & Carbon Chemicals Corp.
Celluloid Corp.
Commercial Solvents Corp.
Dennison Mfg. Co.
Dobeckmun Co., The
du Pont de Nemours & Co., Inc., E. I.
Eastman Kodak Co.
Fales Chemical Co., Inc.
Findley Co., The F. G.
Hercules Powder Co.
Maas & Waldstein Co.
Manhattan Paste & Glue Co.
Midland Glue Products Co.
Minnesota Mining & Mfg. Co.
Monsanto Chemical Co., Merrimac Div.
National Starch Products, Inc.
Paisley Products, Inc.
Resinox Corp.
Seal, Inc.
Stein Hall Mfg. Co.
Sylvania Industrial Corp.
Union Paste Co.
Williamson Adhesives, Inc.
Williamson Glue & Gum Works, Inc.

ADHESIVES, CEMENT BONDING PLASTICS

Arabol Mfg. Co., The
Atlas Powder Co., Zapon Div., and Zapon-Brevolite Div.
Bakelite Corp.
Beetle Products Division of American Cyanamid Co.
Catalin Corp.
Celluloid Corp.
du Pont de Nemours & Co., Inc., E. I.
Durez Plastics & Chemicals, Inc.
Maas & Waldstein Co.
Monsanto Chemical Co., Merrimac Div.
National Starch Products, Inc.
Plaskon Co., Inc.
Resinox Corp.
Union Paste Co.

APPLICATOR CLOSURES (Glass, Rod, Brush, Dropper, Swab)

Anchor Cap & Closure Corp.
Armstrong Cork Co., Closure Division
Bridgeport Metal Goods Mfg. Co., The
Carr-Lowrey Glass Co.
Colt's Patent Fire Arms Mfg. Co.
Dodge Cork Co., Inc.
Double Duty Products, Inc.
Federal Tool Corp.
Kimble Glass Co.
Mack Molding Co., Inc.
Mundet Cork Corp.
Owens-Illinois Glass Co.
Pennsylvania Glass Products Co.
Scovill Manufacturing Co.
Tyer Rubber Co.
Waterbury Button Co., The

APPLICATORS, MEDICINAL

Aluminum Seal Co.
Armstrong Cork Co.
Colt's Patent Fire Arms Mfg. Co.
Double Duty Products, Inc.
Federal Tool Corp.
Hygienic Tube & Container Corp.
Kimble Glass Co.
Lusteroid Container Co., Inc.
Owens-Illinois Glass Co.
Standard Specialty & Tube Co.

BAGS, ANTI-TARNISH (Cloth and Cotton-Lined Paper)

Cottonluxe Manufacturing Co.
Eureka Mfg. Co., Inc.

BAGS, FOIL

American Paper Goods Co.
Andrews Corp., P. L.
Betner Co., Benj. C.
Continental Bag Specialties Corp.
Cupples-Hesse Envelope & Litho. Co.
Equitable Paper Bag Co., Inc.
Ivers-Lee Co.
Milprint, Inc.
Oneida Paper Products, Inc.
Reynolds Metals Co., Inc.
Royal & Co., Thomas M.
Union Bag & Paper Corp.
U. S. Envelope Co.
Wurzburg Bros.

BAGS, GLASSINE & WAXED

Allied Paper Bag Corp.
American Paper Goods Co.
American Tissue Mills
Andrews Corp., P. L.
Bemis Bros. Bag Co.
Betner Co., Benj. C.
Bleyer & Co., Alfred
Brooks Paper Co.
Brown Bag Filling Machine Co., The
Brown Paper Goods Co.
Central Waxed Paper Co.
Chippewa Paper Products, Inc.
Continental Bag Specialties Corp.
Cupples-Hesse Envelope & Litho. Co.
Dennison Mfg. Co.
Detroit Wax Paper Co.
Equitable Paper Bag Co., Inc.
Food Packaging, Inc.
Henle Wax Paper Mfg. Co., Inc., The
Herz Co., Alexander
Jaite Co., The
Lawrence Bag Co., The
Matthias Paper Corp.
Menasha Products Co., The
Milprint, Inc.
Moser Bag & Paper Co., The
Newark Glassine Bag Co.
Oneida Paper Products, Inc.
Paramount Paper Products Co., Inc.
Riegel Paper Corp.
Royal & Co., Thomas M.
Shellmar Products Co.
Sweetnam, Inc., Geo. H.
Union Bag & Paper Corp.
U. S. Envelope Co.
Whiting-Patterson Co., Inc.
Wolf Bros.
Wurzburg Bros.

XUM

BAGS, LATEX

Dewey & Almy Chemical Co.

BAGS, MAILING

Andrews Corp., P. L.
Bemis Bros. Bag Co.
Chippewa Paper Products, Inc.
Continental Bag Specialties Corp.
Cupples-Hesse Envelope & Litho. Co.
Equitable Paper Bag Co., Inc.
Oneida Paper Products, Inc.
Union Bag & Paper Corp.
Whiting-Patterson Co., Inc.
Wolf Brothers
Wurzburg Bros.

BAGS, MULTIWALL HEAVY DUTY

Arkell & Smiths
Bagpak, Inc.
Bemis Bros. Bag Company
Equitable Paper Bag Co., Inc.
George & Sherrard Paper Co.
Jaite Company, The
Raymond Bag Company, The
St. Regis Paper Co.
Union Bag & Paper Corp.

BAGS, PAPER

Adams Bag Co.
Allied Paper Bag Corp.
American Paper Goods Co.
Andrews Corp., P. L.
Angier Corp.
Arkell Safety Bag Co.
Bagpak, Inc.
Bates Valve Bag Co.
Bemis Bros. Bag Co.
Betner Co., Benj. C.
Blake Moffitt & Towns
Brown Bag Filling Machine Co., The
Brown Paper Goods Co.
Central States Paper & Bag Co.
Chase Bag Co.
Continental Bag Specialties Corp.
Cupples-Hesse Envelope & Litho. Co.
Equitable Paper Bag Co., Inc.
Gaylord Container Corp.
Hudson Bag Co.
Jaite Co., The
Lawrence Bag Co., The
Moser Bag & Paper Co., The
Oneida Paper Products, Inc.
Paramount Paper Products Co., Inc.
Raymond Bag Co., The
Royal & Co., Thomas M.
Sweetnam, Inc., Geo. H.
Union Bag & Paper Corp.
Wolf Bros.
Wurzburg Bros.
Zellerbach Paper Co.

BAGS, PAPER, SHIPPING

Arkell & Smiths
Bagpak, Inc.
Bates Valve Bag Corp.
Bemis Bros. Bag Co.
Betner Co., Benj. C.
Central States Paper & Bag Co.
Chase Bag Co.
Continental Paper & Bag Corp.
Cromwell Paper Co.
Crown-Willamette Paper Co.
Cupples-Hesse Envelope & Litho. Co.
Diem & Wing Paper Co.
Equitable Paper Bag Co., Inc.
Fulton Bag & Cotton Mills
Gaylord Container Corp.
Jaite Co., The
Kennedy Car Liner & Bag Co.
Oneida Paper Products, Inc.
Raymond Bag Co., The
Royal & Co., Thomas M.
Taggart Bros. Co., Inc.
Tarentum Paper Mills
Union Bag & Paper Corp.
Valve Bag Co.
Wolf Bros.
Wurzburg Bros.

BAGS, TRANSPARENT CELLULOSE
(Plain and Printed)

Allied Paper Bag Corp.
American Paper Goods Co.
Andrews Corp., P. L.
Bemis Bros. Bag Co.
Bleyer & Co., Alfred
Brooks Paper Co.
Brown Paper Goods Co.
Celloray Co.
Central States Paper & Bag Co., Inc.
Chippewa Paper Products, Inc.
Continental Bag Specialties Corp.
Crystal Tube Mfg. Co.
Cupples-Hesse Envelope & Litho. Co.
Custom Made Paper Bag Co.
Dennison Mfg. Co.
Detroit Wax Paper Co.
Dobeckmun Co., The
Equitable Paper Bag Co., Inc.
Food Packaging, Inc.
Hanger Co. of America, Henry
Herz Co., Alexander
Humitube Mfg. Co.
Interstate Folding Box Co.
Ivers-Lee Co.
Jaite Co., The
Mason Envelope Co.
Matthias Paper Corp.
Milprint, Inc.
Munson Bag Co., The
Nashua Gummed & Coated Paper Co.
Newark Paraffine & Parchment Paper Co.
Oneida Paper Products, Inc.
Parfait Powder Puff Co., Inc.
Peters Machinery Co.
Print-A-Tube Co.
Royal & Co., Thomas M.
Shellmar Products Co.
Sweetnam, Inc., Geo. H.
Tower Envelope Co.
Traver Corp.
Union Bag & Paper Corp.
United States Envelope Co.
Vis-O-Tube Co.
Whiting Patterson Co., Inc.
Wolf Brothers
Wurzburg Bros.

BAGS, WINDOW

Andrews Corp., P. L.
Betner Co., Benj. C.
Brooks Paper Co.
Central States Paper & Bag Co.
Chippewa Paper Products, Inc.
Continental Bag Specialties Corp.
Cupples-Hesse Envelope & Litho. Co.
Dennison Mfg. Co.
Dobeckmun Co., The
Interstate Folding Box Co.
Jaite Company, The
Milprint, Inc.
Munson Bag Co., The
Oneida Paper Products, Inc.
Parfait Powder Puff Co., Inc.
Royal & Co., Thomas M.
Shellmar Products Co.
Tower Envelope Co.
Union Bag & Paper Corp.
United States Envelope Co.
Wurzburg Bros.

BANDS, CELLULOSE BOTTLE

Armstrong Cork Co.
du Pont de Nemours & Co., Inc., E. I.
Sylvania Industrial Corp.

BOTTLES, ALUMINUM

American Aluminum Ware Co.
Scovill Manufacturing Co.
Victor Metal Products Corp.

BOTTLES, APPLIED COLOR

Anchor Hocking Glass Corp.
Armstrong Cork Co.
Carr-Lowrey Glass Co.
Coloroid Company
Hazel-Atlas Glass Co.
Owens-Illinois Glass Co.
Owens-Illinois Pacific Coast Co.
Thatcher Mfg. Co.

BOTTLES, BEVERAGE

Anchor Hocking Glass Corp.
Armstrong Cork Co.
Ball Brothers Co.
Buck Glass Co.
Chattanooga Glass Co.
Diamond Glass Co.
Fairmount Glass Works
Federal Glass Co.
Glenshaw Glass Co.
Hamilton Co., J. T. & A.
Hazel-Atlas Glass Co.
Hemingray Glass Co.
Laurens Glass Works
Maryland Glass Corp.
Owens-Illinois Glass Co.
Owens-Illinois Pacific Coast Co.
Reed Glass Co., F. E.
Root Glass Co.
Whitall-Tatum Dept. (Armstrong Cork Co.)
Wurzburg Bros.

BOTTLES, COLORED

Anchor Hocking Glass Corp.
Armstrong Cork Co.
Carr-Lowrey Glass Co.
Coloroid Company
Federal Glass Co.
Hazel-Atlas Glass Co.
Maryland Glass Corp.
Owens-Illinois Glass Co.
Owens-Illinois Pacific Coast Co.

BOTTLES, FOOD PACKING

Anchor Hocking Glass Corp.
Armstrong Cork Co.
Ball Bros. Co.
Brockway Glass Co., Inc.
Carr-Lowrey Glass Co.
Fairmount Glass Works
Federal Glass Co.
Food Dispenser Co.
General Glass Corp.
Glenshaw Glass Co.
Hazel-Atlas Glass Co.
Maryland Glass Corp.
Olean Glass Co., Inc.
Owens-Illinois Glass Co.
Owens-Illinois Pacific Coast Co.
Reed Glass Co., F. E.
Tygart Valley Glass Co.
Whitall-Tatum Dept. (Armstrong Cork Co.)
Wurzburg Bros.

BOTTLES, HAND MADE

Carr-Lowrey Glass Co.
Swindell Brothers, Inc.

BOTTLES, MILK

Buck Glass Company
Gardner-Richardson Co., The (paper)
Hamilton Co., J. T. & A.
Knox Glass Bottle Co.
Lamb Glass Co.
Liberty Glass Co.
Owens-Illinois Glass Co.
Owens-Illinois Pacific Coast Co.

Reed Glass Co., F. E.
Thatcher Mfg. Co.
Three Rivers Glass Co.
Universal Glass Products Co.

BOTTLES, PAPER

American Can Co.
American Paper Bottle Co.
Brown & Bailey Co.
Gardner-Richardson Co., The (milk)
Lily Tulip Cup Corp.
Menasha Products Co., The (milk)
Mono Service Co.
National Folding Box Co.
Pulp Products Co., Inc.
Purity Paper Vessels Co.
Reed Container Co., Inc.
Ritchie & Co., W. C.
Sealright Co., Inc.
Sutherland Paper Co.

BOTTLES, PROPRIETARY

American Glass Works
Anchor Hocking Glass Corp.
Armstrong Cork Co.
Ball Bros. Co.
Brockway Glass Co., Inc.
Carr-Lowrey Glass Co.
Fairmount Glass Works
Federal Glass Co.
Foster-Forbes Glass Co.
Gayner Glass Works
General Glass Corp.
Glenshaw Glass Co.
Hagerty Bros. & Co.
Hamilton Co., J. T. & A.
Hazel-Atlas Glass Co.
Kimble Glass Co.
Knox Glass Bottle Co.
Maryland Glass Corp.
Owens-Illinois Glass Co.
Owens-Illinois Pacific Coast Co.
Pennsylvania Glass Products Co.
Pierce Glass Co.
Reed Glass Co., F. E.
Swindell Brothers
Three Rivers Glass Co.
Wheaton Co., T. C.
Whitall-Tatum Dept. (Armstrong Cork Co.)
Wurzburg Bros.

BOX BOARD, ASPHALT LINED

Butterfield-Barry Co., Inc.
Consolidated Paper Co.
Eddy Paper Corp., The
Empire Box Corp.
Empire Central Box Corp.
Gair Co., Inc., Robert
Gardner-Richardson Co., The
Grant Paper Box Co.
Kieckhefer Container Co.
La Boiteaux Co., The
Rockford Fibre Container Co.
Sisalkraft Co.
Waldorf Paper Products Co.

BOX BOARD, CLAY-COATED

American Coating Mills, Inc.
Bradner Smith & Co.
Butterfield-Barry Co.
Container Corp. of America
Dennison Mfg. Co.
Fort Orange Paper Co.
Gair Co., Inc., Robert
Kieckhefer Container Co.
La Boiteaux Co., The
Lowe Paper Co.
Matthias Paper Corp
Miller Paper Co.
National Folding Box Co.
Paper Affiliates Co., Inc.
United Paperboard Co., Inc.
Wabash Coating Mills
Warren Co., S. D.

BOX BOARD, FOLDING

Alton Box Board Co.
American Box Board Co.
American Coating Mills, Inc.
Bradner Smith & Co.
Butterfield-Barry Co., Inc.
Columbia Box Board Mills, Inc.
Consolidated Paper Co.
Container Corp. of America
Continental Color Corp.
Dennison Mfg. Co.
Federal Paper Board Co., Inc.
Fibreboard Products, Inc.
Fort Orange Paper Co.
Gair Co., Inc., Robert
Gardner-Richardson Co., The
Kieckhefer Container Co.
La Boiteaux Co., The
Lawless Bros. Paper Mills, Inc.
Lowe Paper Co.
Marathon Paper Mills
Matthias Paper Corp.
Michigan Carton Co.
Middlesex Products Corp.
Miller Paper Co.
Morris Paper Mills
National Folding Box Co.
National Metal Edge Box Co.
Ohio Boxboard Co.
Paper Affiliates Co., Inc.
Republic Paper Board Co.
Robertson Paper Box Co., Inc.
Schmidt & Ault Paper Co.
Seal, Inc.
Sutherland Paper Co.
United Paperboard Co., Inc.
Waldorf Paper Products Co.
Warren Co., S. D.

BOX BOARD, FOLDING (Metallic Coated)

American Coating Mills, Inc.
Artcote Papers, Inc.
Bradner Smith & Co.
Butterfield-Barry Co., Inc.
Dennison Mfg. Co.
Holyoke Coated & Printed Paper Co.
Hughes & Hoffman
Keller-Dorian Paper Co., Inc.
La Boiteaux Co., The
Lowe Paper Co.
McLaurin-Jones Co.
Marvellum Co.
Matthias Paper Corp.
Middlesex Products Corp.
Miller Paper Co.
National Folding Box Co.
New England Card & Paper Co., Inc.
Paper Affiliates Co., Inc.
Plastic Coating Corp.
Reynolds Metals Co., Inc.
Stevens-Nelson Paper Corp.
United Mfg. Co.

BOX BOARD, SET-UP

Alton Box Board Co.
American Coating Mills, Inc.
Butterfield-Barry Co., Inc.
Columbia Box Board Mills, Inc.
Consolidated Paper Co.
Container Corp. of America
Continental Paper Co.
Downingtown Paper Box Co.
Fibreboard Products, Inc.
Fort Orange Paper Co.
Gair Co., Inc., Robert
Gardner-Richardson Co.
Kieckhefer Container Co.
La Boiteaux Co., The
Lawless Bros. Paper Mills, Inc.
McEwan & Son, R. B.
Menasha Products Co., The
National Folding Box Co.
National Metal Edge Box Co.
Paper Affiliates Co., Inc.
Republic Paper Board Co.
Sutherland Paper Co.
United Paperboard Co.
Waldorf Paper Products Co.

BOX STAYS (White, Gray, Plain and Creased)

Bradner Smith & Co.
Knowlton Co., M. D.
McLaurin-Jones Co.
Matthias Paper Corp.
Nashua Gummed & Coated Paper Co.
National Metal Edge Box Co.
Williams & Co., Inc., Chas. W.

BOX STRAPPING

Acme Steel Company
Gerrard Co., Inc., The
Signode Steel Strapping Co.
Stanley Works

BOX TOP PADDING

American Lace Paper Co.
Kimberly-Clark Corp.
Milwaukee Lace Paper Co.
Pauli Corp., Karl
Sweetnam, Inc., Geo. H.
Traver Corp.
Union Wadding Co.
Williams & Co., Inc., Chas. W.

BOX TOP PICTURES

Artistic Flock Novelty Co.
Blum, Emery
Cameo Die & Label Co.
Ketterlinus Litho. Mfg. Co.
Kindred, MacLean & Co., Inc.

BOX WRAPS

See Lithographers and various Paper headings.

BOXES, CORRUGATED AND SOLID FIBRE

AAAAAA Ace Paper Box Corp.
Agar Mfg. Corp.
Albany Corrugated Container Corp.
American Box Board Co.
American Can Co.
American Coating Mills, Inc. (Corrugated)
American Corrugating Co.
Andrew Co., O. B.
Ashtabula Corrugated Box Co., The
Ball Brothers Co.
Bird & Son, Inc.
Brack Container Corp.
Consolidated Paper Co.
Container Corp. of America
Corning Fibre Box Corp.
Crescent Box Corp.
Dexter Folder Co.
Eddy Paper Corp., The
Eggerss-O'Flying Co.
Evans Fibre Box, Division of the Hinde & Dauch Paper Corp.
Federal Container Co.
Fibreboard Products, Inc.
Fort Wayne Corrugated Paper Co.
Gair Co., Inc., Robert
Gardner-Richardson Co., The
Gaylord Container Corp.
Grand-City Container Corp.
Hercules Box Co.
Hinde & Dauch Paper Co., The
Hummel & Downing Co.
Hunt-Crawford Co., The
Inland Container Corp.
Iowa Fibre Box Co.
Kieckhefer Container Co.
Kress Box Co., F. J.
Mengel Co., Inc., The
National Container Corp.
National Metal Edge Box Co.
New Orleans Paper Factory, Inc.

Old Dominion Box Co., Inc.
Ottawa River Paper Co., The
Owens-Illinois Glass Co.
Owens-Illinois Pacific Coast Co.
Paraffine Companies, Inc.
River Raisin Paper Co.
Rochester Folding Box Co., The
Rockford Fibre Container Co.
Schmidt Lithograph Co.
Schultz Co., A. Geo.
Southern Container Co.
Texas Paper Box Mfg. Co.
U. S. Corrugated-Fiber Box Co., The
Wabash Fibre Box Co.
Waldorf Paper Products Co.
Warner Bros. Co., The
Weber & Co., David
Wurzburg Bros.

BOXES, FANCY WOOD

Arrow Mfg. Co., Inc.
Boynton & Co.
Crafts, Inc.
Dennison Mfg. Co.
Eureka Manufacturing Co., Inc.
Mele Mfg. Co.
Nicoll & Co.
Owens-Illinois Glass Co.
Peterson Bros.
Pilliod Cabinet Co., The
Rueckert Mfg. Co.
Schunack, Inc., C. E.
Sheip Mfg. Co., Henry H.
Warner Bros. Co.
Weaver Mfg. Co.
Wilder Mfg. Co.
Young Bros., Inc.

BOXES, FOLDING AND DISPLAY CARTONS

See Cartons

BOXES, LEATHERETTE

Arrow Mfg. Co., Inc.
Bisler, Inc., G. A.
Boynton & Co.
Bridgeport Bag & Jewelry Case Co.
Buedingen Co., Inc., Ferdinand
Buedingen & Son, Wm.
Cambridge Paper Box Co.
Crafts, Inc.
Dennison Mfg. Co.
Durand Mfg. Co.
Ehlbert Products
Eureka Manufacturing Co., Inc.
Eureka Paper Box Corp.
Foster & Cross, Inc.
Harlich Mfg. Co.
Howell & Co., F. M.
Lebanon Paper Box Co.
Lorscheider-Schang Co., Inc., The
Mason Box Co.
Mutual Paper Box Corp.
National Metal Edge Box Co.
Paper Package Company
Ritchie & Co., W. C.
Schunack, Inc., C. E.
Sheip Mfg. Co., Henry H.
Smith Co., The S. K.
Stone Bros., Inc.
Taylor Box Co.
Voss Corp., Karl
Warner Bros. Co.
Weaver Mfg. Co.
Wilkins Paper Box Co., Inc.
Young Bros., Inc.
Young, Inc., Douglas

BOXES, MAILING

AAAAAA Ace Paper Box Corp.
American Coating Mills, Inc.
Atlantic Carton Corp.
Blum Folding Paper Box Co., Inc.
Brooks Bank Note Co.
Brooks & Porter, Inc.
Brown & Bailey Co.
Buedingen Co., Inc., Ferdinand
Burt Co., Inc., F. N.
Cambridge Paper Box Co.
Campbell Box & Tag Co.
Cleveland Container Co.
Consolidated Paper Co.
Container Corp. of America
Deisroth Co., Inc., W. H. (Kwicklasp)
Dennison Mfg. Co.
Eureka Paper Box Corp.
Fitzhugh, Inc., Wm. W.
Fort Orange Paper Co.
Foster & Cross, Inc.
Fox Company, The C. J.
Gair Cleveland Cartons, Inc.
Gair Co., Inc., Robert
Gardner-Richardson Co., The
Gaylord Container Corp.
Gebhart Folding Box Co.
Gereke-Allen Carton Co.
Hinde & Dauch Paper Co.
Howell & Co., F. M.
International Folding Paper Box Co.
Kieckhefer Container Co.
Lebanon Paper Box Co.
Mason Box Co., The
Michigan Carton Co.
Myers, Inc., J. & P. B.
National Folding Box Co.
National Metal Edge Box Co.
Old Dominion Box Co., Inc.
Owens-Illinois Glass Co.
Paper Package Co.
R. C. Can Co.
Richardson Taylor-Globe Corp., The
Ritchie & Co., W. C.
Robertson Paper Box Co., Inc.
Rowell Co., Inc., E. N.
Sample-Durick Co., Inc.
Schultz Co., A. Geo.
Schunack, Inc., C. E.
Sears Paper Box Co., Merle
Seeley Tube & Box Co.
Sefton Fibre Can Co.
Shoup-Owens, Inc.
Simplex Paper Box Corp.
Superior Folding Box Co.
Taylor Box Co.
Universal Folding Box Co., Inc.
Universal Jewelry Case Co.
Waldorf Paper Products Co.
Warner Bros. Co., The
Waterbury Paper Box. Co.
Wilkins Paper Box Co, Inc.
Wurzburg Bros.
Young Bros., Inc.

BOXES, METAL

Advertising Metal Display Co.
Aluminum Co. of America
American Aluminum Ware Co. (Aluminum)
American Can Co.
American Coating Mills, Inc.
Anchor Cap & Closure Corp.
Boynton & Co.
Bronzart Metals Co.
Burdick & Son
Chase Brass & Copper Co., Inc., Container & Closure Division
Clark Co., Inc., Geo. V.
Continental Can Co., Inc.
Crown Can Co., The
Dennison Mfg. Co.
Doehler Die Casting Co.
Ellis & Sons, Inc., George D.
Farrington Mfg. Co.
Grammes & Sons. Inc., L. F.
Gutmann & Co., Ferdinand
Heekin Can Co.
Kep-Ark, Inc.
Majestic Metal Specialties, Inc.
National Can Corp.
Owens-Illinois Can Co.
Scovill Manufacturing Co.
Seymour Products Co., The
Stone Bros., Inc.
Waterbury Button Co., The
Weaver Mfg. Co.
Wurzburg Bros.

BOXES, METAL (Covered and Lined)

Anchor Cap & Closure Corp.
Arrow Mfg. Co., Inc.
Boynton & Co.
Dennison Mfg. Co.
Eureka Mfg. Co., Inc.
Farrington Mfg. Co.
Grammes & Sons, Inc., L. F.
Smith Co., The S. K.
Stone Bros., Inc.
Waterbury Button Co., The

BOXES, MOLDED PLASTIC

See Molders, Custom

BOXES, MOLDED PULP

Boynton & Co.
Chaspec Mfg. Co.
National Folding Box Co.

BOXES, PAPER SET-UP

(A) Machine-made Boxes
(B) Automatic Machine-made Boxes
(C) Hand-made Boxes
(D) Hand-made and Machine-made Boxes.
(G.L.) General line except for specialties which are indicated by name
AAAAAA Ace Paper Box Corp. (A, B, C, D, G. L.)
Alderman Paper Box Corp. (A, B, C, D, G. L.)
Arrow Mfg. Co., Inc. (C)
Bisler, Inc., G. A. (A, B, C, D, candy and holiday)
Brick & Ballerstein (A, B, C, D, G.L.)
Buedingen Co., Inc., Ferdinand (A, C, G.L.)
Buedingen & Son, Wm. (A, B, C, D, all types)
Buffington Co., F. H. (A, G.L.)
Burt Co., Inc., F. N. (A, B, C, D, G.L.)
Cambridge Paper Box Co. (A, B, C, D, G.L., face powder, perfumery, pill and drug, slide, cigarette, candy, mailing)
Campbell Box & Tag Co.
Carter Co., Wm., Paper Box Division
Casselman, T. & E., Inc. (A, B, C, D, G.L.)
Central Paper Box Co.
Chippewa Paper Products, Inc.
Clover Paper Box Co., Inc. (A, B, C, D, G.L., mailing boxes)
Consolidated Box Co., Inc.
Deisroth Co., Inc., W. H. (A, B, C, D, G.L.)
Delta Paper Boxes, Inc.
Dennison Mfg. Co. (A, B, C, D)
Dix, Inc., J. J.
Dorfman & Co., Inc., A.
Durand Mfg. Co. (A, B, C, D, G.L.)
Eureka Paper Box Corp. (A, B, C, D, G.L.)
Fairchild Corp., E. E. (A, B, C, D, G.L.)
Fleisig, Inc., H.
Fort Wayne Paper Box Co. (A, B, C, D, G.L.)
Foster & Cross, Inc. (A, B, C, D, G.L.)
Gair Cleveland Cartons Inc.
Gair Co., Inc., Robert (G.L.)
Gates Paper Co., Ltd.
Gaylord Container Corp. (G.L.)
Grand Rapids Paper Box Co. (A, B, C, D, G.L.)
Henry Co., Ira L. (A, C, D, G.L.)
Hess and Densen (A, B, C, D)
High Point Paper Box Co., Inc. (A, B, C, D, G.L.)
Hollywood Paper Box Corp. (A, B, C, D, G.L.)

XUM

Howell & Co., F. M. (A, B, D, G.L.)
Illinois Paper Box Co. (A, C, D, G.L.)
Jones Paper Box Co., Jesse (A, B, C, D, G.L.)
Kalamazoo Paper Box Co. (A, B, C, D, G.L.)
Kentucky Paper Box Co. (A, B, C, D, G.L.)
Keystone Box Co. (A, B, C, D, G.L.)
Kieckhefer Container Co. (B, G.L.)
Kiernan-Hughes Co.
Killian Co., George P. (A, B, C, D, G.L.)
Klein & Co., Inc. (Candy)
Koehl Co., Wm. (A, B, C, D, G.L.)
Kroeck Paper Box Co. (A, G.L.)
Landowne Co., Inc., J. (D, G.L.)
Lebanon Paper Box Co. (B)
Lorscheider-Schang Co., Inc., The (A, B, C, D)
Maryland Paper Box Co. (A, B, D, G.L., Holiday, shelf)
Mason Box Co., The (A, C, D, G.L.)
Menasha Products Co., The (B, G.L.)
Miller, Inc., W. P. (G.L.)
Molitor Box Co. (A, B, C, D, G.L.)
Mutual Paper Box Corp. (Leather and Leatherette, Embossed & Fancy)
National Folding Box Co. (A, B, C, D)
National Metal Edge Box Co. (A, B, C, D, G.L.)
Neumann Co., The Robert (A, C, D, G.L.)
Ohio Boxboard Co. (A, B, C, D, G.L.)
Old Dominion Box Co., Inc (A, B, C, D, G.L.)
Paper Package Co. (A, B, C, D, G.L.)
Perfumers and Jewelers Box Co., Inc. (A, B, C, G.L.)
Pharmacy Paper Box Co. (A, B, C)
Pictorial Paper Package Corp. (A, B, C, D, G.L.)
Plumly Co., E. K. (D, G.L., Perfume)
Randolph Paper Box Co. (A, B, D)
Rapid Cutting Co. (A, B, G.L.)
Ritchie & Co., W. C. (A, B, C, D, G.L.)
Robertson Paper Box Co., Inc. (A)
Rowell Co., Inc., E. N. (A, B, D)
Schleicher Paper Box Co., F. J. (B, C, D, candy)
Schoettle Co., Edwin J. (A, B, C, D, G.L.)
Schultz Co., A. Geo. (A, B, C, D, G.L.)
Schultz & Co., H. J. (A, B, C, D, G.L.)
Schunack Inc., C. E. (A, C, D)
Scott & McDonald, Inc. (A, B, C, D, G.L.)
Seaman Box Co., Inc.
Sears Paper Box Co., Merle (A, B, C D, G.L.)
Seeley Tube & Box Co. (A, C, D)
Shoup-Owens, Inc. (A, B, C, D, G.L.)
Simplex Paper Box Corp. (A, D)
Smith Co., The S. K. (C)
Spitzer Paper Box Co. (A, B)
Star Case Co. (C, Jewelry, Specialties, Leather)
Taylor Box Co. (A, C, D, G.L.)
Trum, Inc., E. J. (A, D, G.L.)
Universal Jewelry Case Co. (A, B, C, D, G.L.)
Voss Corp., Karl (A, C, D)
Warner Bros. Co., The (A, B, C, D, G.L.)
Waterbury Paper Box Co., The (A B, C, D, G.L.)
Weaver Mfg. Co.
Whitney & Co. Inc. (D)
Wilkins Paper Box Co., Inc. (G.L.)
Wurzburg Bros. (A, C, D)
Young Bros., Inc. (A, B, C, D, G.L.)
Young, Inc., Douglas (A, B, C, D, G.L.)
Youse Co., C. J. (A, B, C, D, candy)
Zipprodt, Inc.

BOXES, TRANSPARENT CELLULOSE

Brooks Paper Co.
Burt Co., F. N.
Cambridge Paper Box Co.
Celluloid Corp.
Central States Paper & Bag Co., Inc.
Cleveland Container Co.
Dobeckmun Co., The
du Pont de Nemours & Co., Inc., E. I.
Eclipse Moulded Products Co.
Emeloid Co., Inc.
Grant Paper Box Co.
High Point Paper Box Co., Inc.
Hygienic Tube & Container Corp.
Lebanon Paper Box Co.
Lusteroid Container Co., Inc.
Mack Molding Co., Inc.
Meyer Bros., Jos. H.
National Metal Edge Box Co.
Parfait Powder Puff Co., Inc.
Rapid Cutting Co., Inc.
Royal Transparent Cont. Corp.
Ritchie & Co., W. C.
Schunack, Inc., C. E.
See-Thru Container Corp.
Shellmar Products Co.
Sillcocks-Miller Co.
Stensgaard & Associates, Inc., W. L.
Transparent Specialties Mfg. Co.
U. S. Envelope Co.
Wallace Paper Box Co.
Young Bros., Inc.
Young, Inc., Douglas

BOXES, WINDOW (Transparent Cellulose)

AAAAAA Ace Paper Box Corp.
American Coating Mills, Inc.
Arvey Corp.
Atlantic Carton Corp.
Blum Folding Paper Box Co., Inc.
Boynton & Co.
Brick & Ballerstein
Brooks Bank Note Co.
Brooks & Porter, Inc.
Brown & Bailey Co.
Buedingen Co., Inc., Ferdinand
Burt Co., Inc., F. N.
Cambridge Paper Box Co., Inc.
Campbell Box & Tag Co.
Carter Co., Wm., Paper Box Division
Celluloid Corp.
Central States Paper & Bag Co.
Chicago Carton Co.
Chippewa Paper Products, Inc.
Container Corp. of America
Deisroth Co., Inc., W. H.
Dennison Mfg. Co.
Dobeckmun Co., The
Empire Box Corp.
Empire Central Box Corp.
Eureka Paper Box Corp.
Fitzhugh, Inc., Wm. W.
Forbes Lithograph Co., The
Fort Orange Paper Co.
Foster & Cross, Inc.
Gair Cleveland Cartons, Inc.
Gair Co., Inc., Robert
Gardner-Richardson Co., The
Hanger Co. of America, The Henry
High Point Paper Box Co., Inc.
Howell & Co., F. M.
International Folding Paper Box Co., Inc.
Interstate Folding Box Co.
Lebanon Paper Box Co.
Lorscheider-Schang Co., Inc.
Mason Box Co., The
Menasha Products Co., The
Meyer Bros., Jos. H.
Michigan Carton Co.
Milprint, Inc.
National Folding Box Co.
National Metal Edge Box Co.
Old Dominion Box Co., Inc.
Paper Package Co.
Parfait Powder Puff Co., Inc.
Pilliod Cabinet Co., The
Randolph Paper Box Co., Inc.
Richardson Taylor-Globe Corp.
Ritchie & Co., W. C.
Robertson Paper Box Co., Inc.
Rowell Co., Inc., E. N.
Russell Box Co.
Sample-Durick Co., Inc.
Schunack Inc., C. E.
Seal, Inc.
Seaman Box Co., Inc.
Seeley Tube & Box Co.
Shellmar Products Co.
Shoup-Owens, Inc.
Simplex Paper Box Corp.
Stecher-Traung Lithograph Corp.
Stensgaard & Associates, Inc., W. L.
Superior Folding Box Co.
Sutherland Paper Co.
Taylor Box Co.
Trenton Folding Box Co.
U. S. Corrugated-Fiber Box Co., The
Universal Folding Box Co., Inc.
Universal Jewelry Case Co.
Voss Corp., Karl
Waldorf Paper Products Co.
Warner Bros. Co., The
Waterbury Paper Box Co.
Weaver Mfg. Co.
Young Bros., Inc.
Young, Inc., Douglas

CADDIES, CRACKER

Cambridge Paper Box Co.
Chicago Carton Co.
Consolidated Paper Co.
Container Corp. of America
Continental Can Co.
Dexter Folder Co.
Eddy Paper Corp., The
Empire Box Corp.
Empire Central Box Corp.
Fibreboard Products, Inc.
Gair Co., Inc., Robert
Gardner-Richardson Co., The
Gaylord Container Corp.
Grant Paper Box Co.
Hinde & Dauch Paper Co., The
Hummel & Downing Co.
Interstate Folding Box Co.
Kieckhefer Container Co.
Morris Paper Mills
National Can Corp.
National Metal Edge Box Co.
River Raisin Paper Co.
Rochester Folding Box Co.
Rockford Fibre Container Co.
Sefton Fibre Can Co.
Traver Corp.
Universal Folding Box Co., Inc.
Waldorf Paper Products Co.

CAN SEALING COMPOUNDS

Carbide & Carbon Chemicals Corp.
Dewey & Almy Chemical Co.

CANS, FIBRE (Paper and Tin Ends)

American Can Company
Cambridge Paper Box Co.
Canister Co., The
Cin-Made Corp.
Cleveland Container Co.
Container Corp. of America
Cordiano Can Co.
Cross Paper Products Corp.
Fibreboard Products, Inc.
Fonda Container Co.
Gardner-Richardson Co., The
Gates Paper Co., Ltd.
Heekin Can Co., The
Indianapolis Paper Container Co.
Lily Tulip Cup Corp.
Marathon Paper Mills
Menasha Products Co., The
Molitor Box Co.
Morris Paper Mills
Paper Canister Co.
Pulp Products Co., Inc.
Randolph Paper Box Co., Inc.
R. C. Can Company
Ritchie & Co., W. C.
Rowell & Co., Inc., E. N.
Russell Box Co.
Sealright Co., Inc.
Seeley Tube & Box Co.
Sefton Fibre Can Co.

Shoup-Owens, Inc.
Stanwood Paper Tube & Can Corp.
Sutherland Paper Co.
Universal Container Co.
Waldorf Paper Products Co.
Wurzburg Bros.

CANS, METAL (Plain and Decorated)

Acme Can Co.
Aluminum Co. of America
American Aluminum Ware Co. (Aluminum)
American Can Co.
Anchor Cap & Closure Corp.
Armstrong Paint & Varnish Works
Burdick & Son, Inc.
Clark Co., Inc., Geo. V.
Clark Mfg. Co., J. L.
Consolidated Fruit Jar Co.
Continental Can Co., Inc.
Cordiano Can Co.
Crown Can Co.
Crown Cork & Seal Co., Inc. (Beer)
Ellis & Sons Inc., George D.
Federal Tin Co., Inc.
Guardian Safety Seal Co.
Heekin Can Co.
Liberty Can & Sign Co.
National Can Corp.
Owens-Illinois Can Co.
Phoenix Metal Cap Co.
Robertson Steel & Iron Co., W. F.
Seymour Products Co., The
Victor Metal Products Corp.
Wheeling Corrugating Co.
Wurzburg Bros.

CANS, METAL (Cellulose Window)

Clark Co., Inc., Geo. V.

CANS, TRANSPARENT (Cellulose)

Brooks Paper Co.
Burt, Co., Inc., F. N.
Cambridge Paper Box Co.
Central States Paper & Bag Co., Inc.
Clark Co., Inc., Geo. V.
Cleveland Container Co., The
Dobeckmun Co., The
Emeloid Co., Inc.
Hygienic Tube & Container Corp.
Lebanon Paper Box Co.
Lusteroid Container Co., Inc.
R. C. Can Co.
Ritchie & Co., W. C.
See-Thru Container Corp.
Transparent Specialties Mfg. Corp.
Waterbury Button Co., The

CAP SEALING COMPOUNDS

Dewey & Almy Chemical Co.
Durez Plastics & Chemicals, Inc.

CAPS, BOTTLE, CELLULOSE

Armstrong Cork Co., Closure Division
Celon Co.
du Pont de Nemours & Co., Inc., E. I.
Emeloid Co., Inc.
Hazel-Atlas Glass Co.
National Seal Co., Inc.
Package Machinery Co.
Parke-Davis Co.
Reynolds Metals Co., Inc.
Sillcocks-Miller Co., The

CAPS, CROWN

Armstrong Cork Co., Closure Division
Bond Mfg. Corp., Inc.
Consolidated Cork Corp.
Continental Can Co., Inc.
Crown Cork & Seal Co., Inc.
Gutmann & Co., Ferdinand
Mundet Cork Corp.
Wheeling Stamping Corp., The

CAPS, METAL

Acme Metal Cap & Closure Co., Inc.
Aluminum Seal Co.
American Aluminum Ware Co. (Aluminum)
Anchor Cap & Closure Corp.
Aridor Co., The
Armstrong Cork Co., Closure Division
Ball Brothers Co.
Bernardin Bottle Cap Co., Inc.
Brass Goods Mfg. Co.
Bridgeport Metal Goods Mfg. Co., The
Carvin Bottle Cap Corp.
Chase Brass and Copper Co., Inc.
Coloroid Company (Applied Color)
Consolidated Fruit Jar Co.
Continental Can Co., Inc.
Crown Cork & Seal Co., Inc.
Empire Metal Cap Co.
Federal Tool Corp.
Food Dispenser Co.
Guardian Safety Seal Co.
Gutmann & Co., Ferdinand
Hazel-Atlas Glass Co.
Kep-Ark, Inc.
Mundet Cork Corp.
National Can Corp.
National Metal Cap Co.
National Seal Company, Inc.
New England Collapsible Tube Co.
No-Kap Closures, Inc.
Owens-Illinois Glass Co.
Owens-Illinois Pacific Coast Co.
Phoenix Metal Cap. Co.
Reynolds Metals Co., Inc.
Scovill Manufacturing Co.
Sefton Fibre Can Co.
Thorn Tite Tops, Inc.
White Cap Co.
White Metal Manufacturing Co.
Williams Sealing Corp.
Wirz, Inc., A. H.
Wurzburg Bros.

CAPS, METAL VACUUM

Aluminum Seal Co.
Anchor Cap & Closure Corp.
Aridor Co., The
Armstrong Cork Co., Closure Division
Crown Cork & Seal Co., Inc.
Guardian Safety Seal Co.
Gutmann & Co., Ferdinand
National Seal Co., Inc.
Owens-Illinois Glass Co.
Owens-Illinois Pacific Coast Co.
Phoenix Metal Cap Co.
White Cap Co.
Wurzburg Bros.

CAPS, MOLDED PLASTIC

American Insulator Corp.
Anchor Cap & Closure Corp.
Armstrong Cork Co., Closure Division
Associated Attleboro Mfrs., Inc.
Auburn Button Works, Inc.
Bridgeport Moulded Prods., Inc.
Colt's Patent Fire Arms Mfg. Co.
Dodge Cork Co., Inc.
Eclipse Moulded Products Co.
Emeloid Co., Inc.
Erie Resistor Corp.
General Electric Co., Plastics Dept.
Kurz-Kasch, Inc.
Mack Molding Co., Inc.
Mundet Cork Corp.
Northern Industrial Chemical Co.
Norton Laboratories, Inc.
Owens-Illinois Glass Co.
Owens-Illinois Pacific Coast Co.
Phoenix Metal Cap Co.
Reynolds Spring Co.
Synthetic Plastics Corp.
Tech-Art Plastics Co.
Terkelsen Machine Co.
Victor Metal Products Corp.
Waterbury Button Co., The
Wheeling Stamping Co.
Wurzburg Bros.

CAPS, PAPER

American Seal-Kap Corp.
Armstrong Cork Co., Closure Division
Cambridge Paper Box Co.
Cleveland Container Co., The
Cross Paper Products Corp.
Fitzhugh, Inc., Wm. W.
Gates Paper Co., Ltd.
General Felt Products, Inc.
Indianapolis Paper Container Co.
Kep-Ark, Inc.
Lowe Paper Co.
Paterson Parchment Paper Co.
R. C. Can Co.
Ritchie & Co., W. C.
Sealright Co., Inc.
Seeley Tube & Box Co.
Sefton Fibre Can Co.
Wurzburg Bros.

CAPSULES (Cellulose)

Armstrong Cork. Co.
Emeloid Co., Inc.
Hygienic Tube & Container Corp.
Lusteroid Container Co., Inc.

CAPSULES AND TUBES (Metal)

Aluminum Co. of America
American Aluminum Ware Co. (Aluminum)
Peerless Tube Co.
Reynolds Metals Co., Inc.
Standard Specialty & Tube Co.
Sun Tube Corp.
Victor Metal Products Corp.
Wheeling Stamping Co., The

CARDBOARD (Clay-Coated)

See Box Board, Clay-Coated

CARTON LINERS (For Folding Boxes)

Ace Carton Corp.
American Coating Mills, Inc.
American Paper Goods Co.
Atlantic Carton Corp.
Ben Mont Papers, Inc.
Central Waxed Paper Co.
Continental Bag Specialties Corp.
Continental Color Corp.
du Pont de Nemours & Co., Inc., E. I.
Equitable Paper Bag Co., Inc.
Ferguson Co., J. L.
Fort Orange Paper Co.
Gardner-Richardson Co., The
Hamersley Mfg. Co., The
Hartford City Paper Co.
Hazen Paper Co.
Henle Wax Paper Mfg. Co., Inc., The
Kalamazoo Vegetable Parchment Co.
Kieckhefer Container Co.
Kimberly-Clark Corp.
Lowe Paper Co.
Marathon Paper Mills
Menasha Products Co., The
Nashua Gummed & Coated Paper Co.
Newark Paraffine & Parchment Paper Co.
Oneida Paper Products, Inc.
Owens-Illinois Glass Co.

XUM

Paper Package Co.
Paterson Parchment Paper Co.
Pioneer Paper Stock Co.
Reynolds Metals Co., Inc.
Rhinelander Paper Co.
Riegel Paper Corp.
Robertson Paper Box Co., Inc.
Sherman Paper Products Co.
Sutherland Paper Co.
Sweetnam, Inc., Geo. H.
Sylvania Industrial Corp.
Traver Corp.
Union Bag & Paper Corp.
Warren Co., S. D.
West Carrollton Parchment Co.
Westfield River Paper Co., Inc.
Wurzburg Bros.

CARTONS, FOLDING AND DISPLAY

AAAAAA Ace Paper Box Corp.
Ace Carton Corp.
Albert Paper Box Co.
American Box Board Co.
American Coating Mills, Inc.
American Colortype Co.
Atlantic Carton Corp.
Badger Carton Co.
Bloomer Bros. Co.
Blum Folding Paper Box Co., Inc.
Brooks Bank Note Co.
Brooks & Porter, Inc.
Brown & Bailey Co.
Burt Co., Inc., F. N.
Cambridge Paper Box Co.
Campbell Box & Tag Co.
Chaspec Mfg. Co.
Chicago Carton Co.
Chippewa Paper Products, Inc.
Consolidated Box Co., Inc.
Consolidated Paper Co.
Container Corp. of America
Continental Folding Paper Box Co. Inc.
Crook Paper Box Co.
Deisroth Co., Inc., W. H.
Dennison Mfg. Co.
Densen-Banner Co., Inc.
Dobeckmun Co., The
Downingtown Paper Box Co.
Einson-Freeman Co., Inc.
Empire Box Corp.
Empire Central Box Corp.
Federal Carton Corp.
Fibreboard Products, Inc.
Fitzhugh, Inc., Wm. W.
Forbes Lithograph Co., The
Fort Orange Paper Co.
Fort Wayne Paper Goods Co.
Fox Company, The C. J.
Foxon Co., The
Gair Cleveland Cartons, Inc.
Gair Co., Inc., Robert
Gardner-Richardson Co., The
Gaylord Container Corp.
Gebhart Folding Box Co.
General Carton Corp.
Gereke-Allen Carton Co.
Grant Paper Box Co.
Guilford Folding Box Co., The
Heywood Co., Inc., R. R.
High Point Paper Box Co., Inc.
Hinde & Dauch Paper Co., The
Howell & Co., F. M.
Hummel & Downing Co.
Indianapolis Paper Container Co.
International Folding Paper Box Co., Inc.
International Printing Co.
Interstate Folding Box Co.
Kieckhefer Container Co.
Kindred, MacLean & Co., Inc.
Krause, Inc., Richard M. (metallic coated)
Lebanon Paper Box Co.
Lord Baltimore Press
Lindley Box & Paper Co.
Lorscheider-Schang Co. Inc., The (Display)
Lowe Paper Co.
Menasha Products Co.
Michigan Carton Co.
Milprint, Inc.
Morris Paper Mills
Myers, Inc., J. & P. B.
National Color Printing Co., Inc.
National Folding Box Co.
National Metal Edge Box Co.
Nevins-Church Press, The
New England Collapsible Tube Co.
Old Dominion Box Co., Inc.
Owens-Illinois Glass Co.
Paper Package Co.
Pictorial Paper Package Corp.
Quad-Color, Inc.
Randolph Box & Label Co.
Randolph Paper Box Co., Inc.
Reynolds Metals Co., Inc.
Richardson Taylor-Globe Corp.
Robertson Paper Box Co., Inc.
Rochester Folding Box Co.
Rode & Brand
Rossotti Lithographing Co.
Russell Box Co.
Sample-Durick Co., Inc.
E. F. Schmidt Co.
Schultz Co., A. Geo.
Shellmar Products Co.
Shoup-Owens, Inc.
Shuttleworth Carton Co., Inc.
Simplex Paper Box Corp.
Snyder & Black, Inc.
Spear Box Co., Inc.
Stecher-Traung Lithograph Corp.
Stone & Forsyth Co.
Superior Folding Box Co.
Sutherland Paper Co.
Trenton Folding Box Co.
Trinity Paper Box Co.
U. S. Printing & Litho. Co., The
Universal Folding Box Co., Inc.
Waldorf Paper Products Co.
Warner Bros. Co., The
Weaver Mfg. Co.
Whitney & Co., Inc.
Wolverine Carton Co.
Wurzburg Bros.
Zipprodt, Inc.

CARTONS, PARAFFINED

American Box Board Co.
American Coating Mills, Inc.
Atlantic Carton Corp.
Bloomer Bros. Co.
Blum Folding Paper Box Co., Inc.
Brooks Bank Note Co.
Brown & Bailey Co.
Butler Paper Products Co.
Campbell Box & Tag Co.
Chicago Carton Co.
Consolidated Paper Co.
Container Corp. of America
Eddy Paper Corp., The
Empire Box Corp.
Empire Central Box Corp.
Fibreboard Products, Inc.
Fitzhugh, Inc., Wm. W.
Fort Orange Paper Co.
Gair Cleveland Cartons, Inc.
Gair Co., Inc., Robert
Gardner-Richardson Co., The
Gaylord Container Corp.
Gereke-Allen Co.
Grant Paper Box Co.
Hummel & Downing Co.
Kieckhefer Container Co.
Menasha Products Co., The
Michigan Carton Co.
Morris Paper Mills
National Folding Box Co.
National Metal Edge Box Co.
Old Dominion Box Co., Inc.
Paper Package Co.
Richardson Taylor-Globe Corp.
Robertson Paper Box Co., Inc.
Rockford Fibre Container Co.
Russell Box Co.
Shuttleworth Carton Co., Inc.
Sutherland Paper Co.
Waldorf Paper Products Co.
Warner Bros. Co., The
Wurzburg Bros.

CASES, SAMPLE

American Aluminum Ware Co. (Aluminum)
Arrow Mfg. Co., Inc.
Bridgeport Bag & Jewelry Case Co.
Buedingen Co., Inc., Ferdinand
Buedingen & Son, Wm.
Cambridge Paper Box Co.
Central Paper Box Co.
Crafts, Inc.
Dennison Mfg. Co.
Eureka Paper Box Corp.
Farrington Mfg. Co.
Lorscheider-Schang Co. Inc., The
Mason Box Co.
Mutual Paper Box Co.
Mele Mfg. Co., Inc.
Nalco, Inc.
National Metal Edge Box Co.
Nicoll & Co.
Paper Package Co.
Parks Co., N. W.
Pilliod Cabinet Co.
Ritchie & Co., W. C.
Rueckert Mfg. Co.
Schunack, Inc., C. E.
Sheip Mfg. Co., Henry H.
Smith Co., The S. K.
Star Case Co.
Voss Corp., Karl
Warner Bros. Co., The
Weaver Mfg. Co.
Wilder Mfg. Co.
Wurzburg Bros.

CELLULOSE ACETATE (Sheets & Rolls)

Celluloid Corp.
du Pont de Nemours & Co., Inc., E. I.
Eastman Kodak Co.
Monsanto Chemical Co., Plastics Div.
Nixon Nitration Works (Sheets)
Sylvania Industrial Corp.
Transolene Co.

CELLULOSE NITRATE

Celluloid Corp.
du Pont de Nemours & Co., Inc., E. I.
Eastman Kodak Co.
Monsanto Chemical Co., Plastics Div. (Sheets, Rods, Tubes)
Nixon Nitration Works

CELLULOSE, SHREDDED

Ben Mont Papers, Inc.
Brooks Paper Co.
Crystal Tissue Co., The
Dennison Mfg. Co.
Dobeckmun Co., The
du Pont de Nemours & Co., Inc., E. I.
Hy-Sil Mfg. Co.
Pioneer Paper Stock Co.
Riegel Paper Corp.
Sweetnam, Inc., Geo. H.
Sylvania Industrial Corp.
Traver Corp.

CELLULOSE, TRANSPARENT (Converters, Fabricators and Printers)

American Paper Goods Co., The
Arvey Corp.
Baker Gravure Co., Inc.
Brooks Paper Co.
Ben Mont Papers, Inc.
Cambridge Paper Box Co.
Caton Printing Co.
Columbia Products Corp.
Continental Bag Specialties Corp.
Crystal Tissue Co., The

CELLOPHANE

du Pont de Nemours & Co., Inc., E. I.
Sylvania Industrial Corp.

Crystal Transparent Mfg. Co.
Crystal Tube Mfg. Co.
Cupples-Hesse Envelope & Litho. Co.
Daniels Mfg. Co.
(Printers)
Dennison Mfg. Co.
Dobeckmun Co., The
Emeloid Co., Inc.
Fibre Cord Co., Inc.
Food Packaging, Inc.
Forbes Lithograph Co., The
Freydberg Bros., Inc.
Hanger Co. of America, The Henry
Hazen Paper Co.
Hy-Sil Mfg. Co.
Ivers-Lee Co.
Liebs Co., Inc., L. A.
Lowery & Schwartz
Marvellum Co., The
Matthias Paper Corp.
Meyer Bros., Jos. H.
Micacrystal Products Co.
Milprint, Inc.
Munson Bag Co., The
Nashua Gummed & Coated Paper Co.
Oneida Paper Products Inc.
Print-A-Tube Co.
Ritchie & Co., W. C.
Royal & Co., Thomas M.
Seaman Box Co.
See-Thru Container Corp.
Shellmar Products Co.
Sweetnam, Inc., Geo. H.
Transparent Specialties Mfg. Co.
Traver Corp.
Union Bag & Paper Corp.
U. S. Envelope Co.
Welsh Paper Co.

CHIPBOARD

American Box Board Co.
American Coating Mills, Inc.
Bradner Smith & Co.
Butterfield-Barry Co.
Chippewa Paper Products, Inc.
Consolidated Paper Co.
Container Corp. of America
Eddy Paper Corp., The
Federal Paper Board Co., Inc.
Fibreboard Products, Inc.
Fort Orange Paper Co.
Gair Co., Inc., Robert
Gardner-Richardson Co., The
Grant Paper Box Co.
Hinde & Dauch Paper Co., The
Kieckhefer Container Co.
La Boiteaux Co., The
Michigan Carton Co.
Miller Paper Co.
National Folding Box Co.
Owens-Illinois Pacific Coast Co.
Riegel Paper Corp.
River Raisin Paper Co.
Robertson Paper Box Co., Inc.
Rockford Fibre Container Co.
Schmidt & Ault Paper Co.
Sutherland Paper Co.
United Paperboard Co.
Waldorf Paper Products Co.

CLOSURES

(A) Single Seal Closures
(B) Re-Seal Closures
(C) Secondary
(D) Special Closures
(E) Sundry Closures
Aluminum Seal Co. (A, B, C, D)
American Aluminum Ware Co. (C)
American Star Cork Co., Inc. (A, B)
Anchor Cap & Closure Corp. (A, B, C, D, E)
Aridor Co., The (B)
Armstrong Cork Co. (A, B, C, D, E)
Bemis Bros. Bag Co. (D)
Betner Co., Benj. C. (B)
Bostitch, Inc. (D)
Chicago Molded Products Corp. (C)
Carvin Bottle Cap Corp. (A, C, D)
Colt's Patent Fire Arms Mfg. Co. (A, B, C, D)
Consolidated Fruit Jar Co. (D)
Cordiano Can Co. (D)
Crown Cork & Seal Co., Inc. (A, B)
Dobeckmun Co., The (C)
Dodge Cork Co., Inc. (B, C)
Double Duty Products, Inc. (D)
Federal Tool Corp. (D)
Food Dispenser Co. (D)
Frank Machine Works, Julius (A, B, C, D)
Guardian Safety Seal Co. (C)
Gutmann & Co., Ferdinand (A, B, C)
Kep-Ark, Inc. (C)
Mundet Cork Corp., crown caps (B, C, D)
National Seal Co., Inc. (B, C, D)
No-Kap Closures, Inc. (D)
Owens-Illinois Glass Co. (A, B, C, D)
Phoenix Metal Cap Co. (A, B, C, D, E)
Reynolds Metals Co., Inc. (B)
Scovill Manufacturing Co. (A, D, E)
Seal, Inc. (A, D)
Sylvania Industrial Corp. (C)
Terkelsen Machine Co. (B, C, D)
Thorn Tite Tops, Inc. (A, C)
Waterbury Button Co., The (C)
White Cap Co. (B)
Williams Sealing Corp. (B)
Wurzburg Bros. (A)

COATINGS, PROTECTIVE

See Varnishes & Lacquers

COLLAPSIBLE TUBES

See Tubes, Collapsible (Aluminum, Lead, Tin & Alloys)

COMPACTS, FANCY METAL

Associated Attleboro Mfrs., Inc.
Brass Goods Mfg. Co.
Bridgeport Metal Goods Mfg. Co., The
Chase Brass & Copper Co., Inc.
Farrington Mfg. Co.
Grammes & Sons, Inc., L. F.
Majestic Metal Specialties, Inc.
Sagamor Metal Goods Corp.
Scovill Manufacturing Co.

CONTAINERS, MOLDED PULP (Bottles, Jars, etc.)

Holed-Tite Packing Corp.
Keyes Fibre Co., Inc.
National Folding Box Co.
Owens-Illinois Glass Co.
Pulp Reproduction Co.
Victor Metal Products Corp.
Wheeling Stamping Co. (Vials)

CONTAINERS, PAPER (Nesting, Waxed and Unwaxed)

American Paper Goods Co.
Cambridge Paper Box Co.
Chicago Carton Co.
Cupples-Hesse Envelope & Litho. Co.
Individual Drinking Cup Co.
Lily Tulip Cup Corp.
Menasha Products Co., The
Mono Service Co.
National Folding Box Co.
R. C. Can Co.
Russell Box Co.
Sealright Co., Inc.
Sutherland Paper Co.
Waldorf Paper Products Co.

CONVEYORS, PACKAGE, ALL TYPES

Acme Steel Co., (steel)
Alvey-Ferguson Co., Inc., The
Amsco Packaging Machinery, Inc.
Automatic Scale Co.
Cambridge Wire Cloth Co., The
Chain Belt Co.
Colton Co., Arthur
Consolidated Packaging Machinery Corp.
Container Equipment Corp.
Dodge Mfg. Co.
Elgin Mfg. Co.
Frank Machine Works, Julius
Gifford-Wood Co.
Horix Manufacturing Co.
Jeffrey Mfg. Co.
Kiefer Machine Co., Karl
Lamson Co., Inc., The
Link-Belt Co.
Logan Co.
Mathews Conveyer Co.
Miller Wrapping & Sealing Machine Co.
National Packaging Machinery Co.
Ross Engineering Corp., J. O.
Standard Conveyor Co.
Stokes Machine Co., F. J.
Syntron Company
Toledo Scale Co.
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co., Inc.
U. S. Bottlers Machinery Co.
U. S. Rubber Products, Inc.

CORD, CELLULOSE

Brooks Paper Co.
Cambridge Paper Box Co.
Dennison Mfg. Co.
Fibre Cord Co.
Franke Sons Co., The
Hy-Sil Mfg. Co.
Safeway Products Corp.

CORK PAPER (Real Cork)

Armstrong Cork Co., Closure Division
Dodge Cork Co., Inc.
Mundet Cork Corp., (Cork Sheets)
Stevens-Nelson Paper Corp.

CORKS

American Cork Co.
American Star Cork Co., Inc.
Armstrong Cork Co., Closure Division
Cork Import Corp.
Dodge Cork Co., Inc.
Mundet Cork Corp.
Truslow & Fulle
Wurzburg Bros.

CORKS, ALUMINUM TOP

American Aluminum Ware Co.
Armstrong Cork Co., Closure Division
Consolidated Fruit Jar Co.
Dodge Cork Co., Inc.
Mundet Cork Corp.

CORKS, MOLDED TOP

Armstrong Cork Co., Closure Division
Colt's Patent Fire Arms Mfg. Co.
Dodge Cork Co., Inc.
Mack Molding Co., Inc.
Mundet Cork Corp.
Waterbury Button Co., The
Wurzburg Bros.

CORKS, WOOD TOP

American Star Cork Co., Inc.
Armstrong Cork Co., Closure Division
Consolidated Fruit Jar Co.
Dodge Cork Co., Inc.
Mundet Cork Corp., (Embossed)
Wurzburg Bros.

COUNTER DISPLAY

See Boxes, Paper Set-Up
See Cartons, Folding and Display

XUM

See Displays, Counter
See Display Fixtures, Metal
See Lithographers
See Molders, Custom

CREPE WADDING

Central States Paper & Bag Co., Inc.
Dennison Mfg. Co.
Kimberly-Clark Corp.
Pauli Corp., Karl
Pioneer Paper Stock Co.
Sweetnam, Inc., Geo. H.
Traver Corp.

DECALCOMANIA

American Bank Note Co.
American Decalcomania Co.
Consolidated Lithographing Corp.
Dennison Mfg. Co.
Foxon Co., The
Mason & Sons, F. E.
Meyercord Co.
Milprint, Inc.
Palm, Fechteler & Co.
Quad-Color, Inc.
Traver Corp.
United States Printing & Lithograph Co., American Lithographic Division

DIES, PAPER CUTTING

Cambridge Paper Box Co.
Helmold & Bro., Inc., J. F.
Parry Machine Co., Inc., Samuel R.
Randolph Paper Box Co., Inc.
Saranac Machine Co.
Simonds Saw & Steel Co.

DISPENSERS, PUMP

Double Duty Products, Inc.
Federal Tool Corp.
Food Dispenser Co.

DISPLAY FINISHING

Display Finishing Co.
Merit Display Card Co.

DISPLAY FIXTURES, METAL (Counter, Floor and Window)

Advertising Metal Display Co.
American Aluminum Ware Co., (Aluminum)
Busch & Thiem Co., The
Central Wire Frame Co.
Darling Co., L. A.
Diamond Press, Inc., Display-Rite Div.
Displayers, The
Gray Wire Specialty Co., The
Helmco Sales
Kerr Wire Products Co.
Liberty Can & Sign Co.
Lyon Metal Products, Inc.
National Can Corp.
Nelke Sign Mfg. Co., Inc.
Owens-Illinois Can Co.
Stensgaard & Associates, W. L.
Union Steel Products Co.
United Steel & Wire Co., Inc.
Washburn Co., The

DISPLAY, WINDOW AND COUNTER

See Boxes, Paper Set-Up
See Cartons, Folding and Display
See Lithographers
See Molders, Custom

DISPLAYS, COUNTER (Of Glass and Wood)

Arrow Mfg. Co., Inc.
Boynton & Co.
Central Paper Box Co.
Chaspec Mfg. Co.
Crafts, Inc.
Diamond Press, Inc., Display-Rite Div.
Gaylord Container Corp.
Glass Display, Inc.
Kay Displays, Inc.
Kayton, Robert
Ketterlinus Litho. Mfg. Co.
Nicoll & Co.
Peterson Bros.
Pilliod Cabinet Co., The
Quad-Color, Inc.
Rueckert Mfg. Co.
Schunack, Inc., C. E.
Sheip Mfg. Co., Henry H.
Star Case Co.
Stensgaard & Associates, W. L.
United States Printing & Lithograph Co., The
Wilder Mfg. Co.
Wood Electric Co. Inc., C. D.
Young Bros., Inc.

DISPLAYS, FLOOR STAND (Corrugated & Solid Fibre)

Albany Corrugated Container Corp.
American Box Board Co.
American Coating Mills, Inc. (Corrugated)
Chicago Carton Co.
Consolidated Paper Co.
Container Corp. of America.
Dennison Mfg. Co.
Diamond Press Inc., Display-Rite Div.
Eddy Paper Corp., The
Gair Cleveland Cartons, Inc.
Gair Co., Inc., Robert
Gaylord Container Corp.
Grand-City Container Corp.
Hinde & Dauch Paper Co., The
Inland Container Corp.
Kieckhefer Container Co.
Merit Display Card Co.
Milprint, Inc.
National Container Corp.
National Folding Box Co.
Ottawa River Paper Co., The
Quad-Color, Inc.
River Raisin Paper Co.
Rockford Fibre Container Co.
Schmidt Lithograph Co.
Stensgaard & Associates, W. L.
U. S. Corrugated-Fiber Box Co., The
Waldorf Paper Products Co.
Wurzburg Bros.

DISPLAYS, FLOOR STAND (Lithographed)

See Lithographers

DISPLAYS, MOLDED PULP

Chaspec Mfg. Co.
Foxon Co., The
Merit Display Card Co.
Stensgaard & Associates Inc., W. L.

DISPLAYS, MOTION, MECHANISM

American Label Co.
Crafts, Inc.
Displayers, The
Gregory Motors, Inc.
Mergenthaler Linotype Co.
Merit Display Card Co.
Milprint, Inc.
National Carbon Co., Inc.
Reynolds Electric Co.
Speedway Mfg. Co., The
Stensgaard & Associates Inc., W. L.
Wood Electric Co., Inc., C. D.

DISPLAYS, MOUNTING AND FINISHING

Display Finishing Co.
Merit Display Card Co.

DISPLAYS, TRANSPARENT, CELLULOSE

Emeloid Co., Inc., The
Meyer Bros., Jos. H.
Parfait Powder Puff Co. Inc.
See-Thru Container Corp.
Transparent Specialties Mfg. Co.

DROPPERS, BOTTLE

Anchor Hocking Glass Corp.
Armstrong Cork Co.
Carr-Lowrey Glass Co.
Double Duty Products, Inc.
Food Dispenser Co., The
Kimble Glass Co.
Maryland Glass Corp.
Owens-Illinois Glass Co.
Pennsylvania Glass Products Co.
Scovill Manufacturing Co.

DROPPERS, MEDICINAL (Cellulose)

Hygienic Tube & Container Corp.
Lusteroid Container Co., Inc.

DRUMS, FIBRE

American Can Corp., The
Arvey Corp., The
Carpenter Container Co., Inc.
Champion Container Co.
Cleveland Container Co.
Container Co., The
Emery Carpenter Container Co.
Gardner-Richardson Co.
Gaylord Container Corp.
Knowlton Co., M. D.
Master Package Corp.
Morris Paper Mills
National Folding Box Co.
Philadelphia Carpenter Container Co., Inc.

DRUMS, STEEL

Aluminum Co. of America (Aluminum)
Crown Can Co., The
Wheeling Corrugating Co., Steel Container Div.
Wilson & Bennett Mfg. Co., The

EMBOSSING ROLLS (Paper)

Dornbusch Agency, Inc., The
Hudson-Sharp Machine Co.
L. C. Machinery Co., Inc.
Marconetti, Inc., A. E.
Model Machinery Corp.
Waldron Corp., John
Williams & Co., Inc., Chas. W.

ENVELOPES

American Paper Goods Co.
Baltimore Paper Co.
Berkowitz Envelope Co.
Bradner Smith & Co.
Brooks Bank Note Co.
Brown Bag Filling Machine Co., The
Cupples-Hesse Envelope & Litho. Co.
Dennison Mfg. Co.
Dobeckmun Co., The
Equitable Paper Bag Co., Inc.
Fleming-Potter Co., Inc.
Forbes Lithograph Co., The
Michigan Lithographing Co.
Milprint, Inc.
Munson Bag Co., The
Reynolds Metals Co., Inc.
Royal Paper Corp.
Royal & Co., Thomas M.
Seal, Inc. (Heat-Sealing)
Shellmar Products Co.

Stecher-Traung Lithograph Corp.
Tension Envelope Corp.
Union Bag & Paper Corp.
U. S. Envelope Co.
U. S. Printing & Lithograph Co., The, American Lithographic Division
Wolf Bros.
Wurzburg Bros.

ENVELOPES, CLOTH

Cottonluxe Manufacturing Co.
Holliston Mills Inc., The
Royal Paper Corp.
U. S. Envelope Co.

ENVELOPES, CLOTH AND COTTON-LINED PAPER

Cottonluxe Manufacturing Co.
Eureka Mfg. Co., Inc.

ENVELOPES, TRANSPARENT CELLULOSE

See Bags, Transparent Cellulose

EXCELSIOR PAPER

Ben Mont Papers, Inc.
Brooks Paper Co.
Crystal Tissue Co., The
Daniels Mfg. Co.
Kalamazoo Vegetable Parchment Co.
La Monte & Son, George
Paterson Parchment Paper Co.
Pioneer Paper Stock Co.
Sweetnam, Inc., Geo. H.
Traver Corp.

FILTERS & FILTER PAPER

Filler Machine Co., Inc.
Kiefer Machine Co., The Karl
Pneumatic Scale Corp., Ltd.
U. S. Bottlers Machinery Co.

FINISHERS, CUSTOM

See Paper Finishers

FINISHERS, DISPLAY

See Display Finishing

FLOCKING

Artistic Flock Novelty Co.
Cambridge Paper Box Co.
Micacrystal Products Co.

FOIL, METAL (Aluminum, Tin, Lead, etc.)

Aldine Paper Co.
Aluminum Co. of America (aluminum only)
American Brass Co., The (copper)
American Foil Corp.
Ben Mont Papers, Inc.
Beveridge-Marvellum Co.
Bradner Smith & Co.
Dejonge & Co., Louis
Fleming-Potter Co., Inc.
Foil Products Corp.
Hampden Glazed Paper & Card Co.
Hazen Paper Co.
Keller-Dorian Paper Co., Inc.
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
McLaurin-Jones Co.
Marvellum Co., The
Matthias Paper Corp.
Middlesex Products Corp.
Miller Paper Co.
Milprint, Inc.
Paper Affiliates Co., Inc.
Paper City Mfg. Co., Inc.
Pauli Corp., Karl
Peerless Roll Leaf Co., Inc.
Reynolds Metals Co., Inc.
Seal, Inc. (Heat Sealing)
Standard Rolling Mills, Inc.
Steffens, Jones & Co., Inc.
Stevens-Nelson Paper Corp.
Walther & Co., Inc.
Whiting Co., Inc., C. R.
Williams & Co., Inc., Chas. W.
Yorkville Paper Co. Inc.

FOLDING BOXES

See Cartons Folding and Display

GLASS, ROD AND TUBING

Corning Glass Co.
Kimble Glass Co.

GLUES AND PASTES

See Adhesives

GOLD LEAF

See Roll Leaf

GUMMED TAPE, CLOTH

Artcote Papers, Inc.
Bradner Smith & Co.
Central Paper Co.
Chicago Gum Tape Co.
Chippewa Paper Products, Inc.
Dejonge & Co., Louis
Dennison Mfg. Co.
Eastman Kodak Co.
Ever Ready Label Corp.
Freydberg Bros., Inc.
Gair Co., Inc., Robert
Gaylord Container Corp.
Griffin, Campbell, Hayes, Walsh, Inc.
Gummed Products Co., The
Gummed Tape & Devices Co.
Holliston Mills, Inc.
Holyoke Coated & Printed Paper Co.
Knowlton Co., M. D.
McLaurin-Jones Co.
Matthias Paper Corp.
May Co., J. L.
Mid-States Gummed Paper Co.
Minnesota Mining & Mfg. Co.
Nashua Gummed & Coated Paper Co.
Paper Affiliates Co., Inc.
Queen City Paper Co.
Rexford Paper Co.
Reyburn Mfg. Co., Inc., The
Seal, Inc. (Heat Sealing)
Whiting Co., Inc., C. R.
Williams & Co., Inc., Chas. W.

GUMMED TAPE (For Transparent Cellulose)

Central States Paper & Bag Co., Inc.
Dennison Mfg. Co.
du Pont de Nemours & Co., Inc., E. I.
Goodyear Tire & Rubber Co., Inc.
Graeme Harrison Products, Inc.
Hy-Sil Mfg. Co.
McLaurin-Jones Co.
Minnesota Mining & Mfg. Co.
Nashua Gummed & Coated Paper Co.
Paper Affiliates Co., Inc.
Reyburn Mfg. Co., Inc., The

GUMMED TAPE (Plain, Printed, Colored)

Better Packages, Inc.
Bradner Smith & Co.
Central Paper Co.
Central States Paper & Bag Co., Inc.
Chicago Gummed Tape Co.
Chippewa Paper Products, Inc.
Crowell Corp., The
Dennison Mfg. Co.
Edgewater Paper Co.
Eureka Specialty Printing Co.
Ever Ready Label Corp.
Gair Co., Inc., Robert
Gaylord Container Corp.
Gummed Products Co., The
Gummed Tape & Devices Co.
Holyoke Coated & Printed Paper Co.
Knowlton Co., M. D.
Lambooy Label & Wrapper Co.
McLaurin-Jones Co.
Matthias Paper Corp.
Metal Specialties Mfg. Co.
Mid-States Gummed Paper Co.
Mosinee Paper Mills Co.
Nashua Gummed & Coated Paper Co.
Paper Affiliates Co., Inc.
Rexford Paper Co.
Shuman Co., Frank G.
Standard Paper Co.
Sweetnam, Inc., George H.
Union Gummed Products Co.
Williams & Co., Inc., Chas. W.
Wortendyke Mfg. Co.
Wurzburg Bros.
Yorkville Paper Co., Inc.

HAMMERS & TACKERS, AUTOMATIC FEED

Bostitch, Inc.
Heller Co., The

HANDLES AND KNOBS (Molded Plastic)

See Molders, Custom

HINGES, BOX

General Electric Co.
Rathbun Molding Corporation

INK, LITHOGRAPHING AND PRINTING

Capitol Printing Ink Co., Inc.
Crescent Ink & Color Co. of Pa.
Davids Ink Co., Thaddeus
Eagle Printing Ink Co.
Empire Box Corp.
Empire Central Box Corp.
Fuchs & Lang Mfg. Co.
General Printing Ink Corp.
Huber, Inc., J. M.
International Printing Ink Corp.
Johnson, Inc., C. Eneu
Levey Co., Inc., Frederick H.
Markem Machine Co.
Morrill Co., Geo. H., Division of General Printing Ink Corp.
Peerless Roll Leaf Co., Inc.
Pope & Gray, Inc.
Sinclair & Carroll Co., Inc.
Sinclair & Valentine
Sun Chemical & Color Co.
Triangle Ink & Color Co.
Ullman Co., Sigmund
Wood, Nathan & Virkus Co., Inc. (special lustre glass and metallic inks)

INSERTS, PACKAGE

See Lithographers

JAR COVERINGS

See Caps (various headings)

JARS, GLASS (Packers' Tumblers)

Anchor Hocking Glass Corp.
Armstrong Cork Co.

XUM

Ball Bros. Co.
Brockway Glass Co., Inc.
Fairmount Glass Works, Inc.
Federal Glass Co.
Food Dispenser Co., The
General Glass Co.
Hart Glass Mfg. Co.
Hazel-Atlas Glass Co.
Libbey Glass Mfg. Co.
Owens-Illinois Glass Co.
Owens-Illinois Pacific Coast Co.
Tygart Valley Glass Co.

JARS, MOLDED

See Molders, Custom

JARS, OPAL

Anchor Hocking Glass Corp.
Brockway Glass Co., Inc.
Carr-Lowrey Glass Co.
Coloroid Company (Colored)
Hazel-Atlas Glass Co.
Owens-Illinois Glass Co.
Ruth Glass Co.
Wheaton, T. C.
Whitall-Tatum Co., Dept. (Armstrong Cork Co.)
Wurzburg Bros.

JARS, POTTERY

Bennett Pottery Co., Edwin
Buckeye Pottery Co.
Canonsburg Pottery Co.
Cliftwood Potteries, Inc.
Cronin China Co.
Fulper Pottery Co.
Haeger Potteries, Inc.
Hull Pottery Co.
McNicol Chin Co., P. A.
Mercer Pottery Co.
Morton Pottery Co., The
Paden City Pottery Co.
Pfaltzgraff Pottery Co.
Red Wing Union Stoneware Co.
Robinson-Ransbottom Pottery Co.
Roseville Pottery Co.
Tycer Pottery Co., W. I.
U. S. Stoneware Co.
Weller Company, S. A.
Western Pottery Co.
Western Stoneware Co.

KNIVES, FLAT BED CUTTING

Harris-Seybold-Potter Co., Seybold Div.

LABELS AND SEALS
(Flat and Embossed)

American Bank Note Co.
American Label Co.
Andersen, A. J.
Ben Mont Papers, Inc.
Brett Litho. Co.
Brooks Bank Note Co.
Brooks & Porter, Inc.
Calvert Lithographing Co., The
Cambridge Paper Box Co.
Cameo Die & Label Co.
Central Lithograph Co., The
Chaspec Mfg. Co.
Chicago Carton Co.
Consolidated Lithographing Corp.
Crown Paper Box & Label Co.
Dennison Mfg. Co.
Dobeckmun Co., The
Eckart Label Mfg. Co.
Eureka Specialty Printing Co.
Ever Ready Label Corp.
Fenton Label Co.
Fitzhugh, Inc., Wm. W.
Fleming-Potter Co., Inc.
Forbes Lithograph Co., The
Foxon Co., The
French-Bray Printing Co., The
Fuller Label & Box Co.
Gamse Lithographing Co., Inc.
Grammes & Sons, Inc., L. F.
Grand Rapids Label Co.
Hanograf Corp.
Heywood Co., Inc., R. R.
Horn, John
Howell & Co., F. M.
Kaumagraph Co.
Ketterlinus Litho. Mfg. Co.
Kittredge & Co., R. J.
Krause, Inc., Richard M.
Lambooy Label & Wrapper Co.
Lehmann Printing & Lithographing Co.
Lord Baltimore Press
Mason & Sons, F. E.
May Co., The J. L.
Michigan Litho. Co.
Milwaukee Label & Seal Co.
Muirson Label Co., Inc.
Nalco, Inc.
Nashua Gummed & Coated Paper Co.
National Color Printing Co., Inc., The
Nevins-Church Press, The
Outserts, Inc. (combination folder and label)
Pacific Fine Arts-Pacific Label Co.
Palm, Fechteler & Co.
Reyburn Mfg. Co., Inc., The
Reynolds Metals Co., Inc.
Robinson Tag & Label Co.
Rode & Brand
Rose Bros. (Gainsborough) Ltd.
Rossotti Lithographing Co., Inc.
Royal & Co., Thomas M.
St. Louis Sticker Co.
E. F. Schmidt Co.
Schmitt & Co., Inc., Geo.
Seal, Inc., (Heat-Sealing)
Shellmar Products Co.
Shuman Co., Frank G.
Stanley Mfg. Co., The
Stecher-Traung Lithograph Corp.
Strobridge Lithographing Co.
Tablet & Ticket Co., The
Tompkins' Label Service
Trautmann, Bailey & Blampey
Unique Printed Products Co., Inc.
United States Printing & Litho. Co., The
Waldorf Paper Products Co.
Warner Bros. Co., The
Weil Sons Litho. Co., David
Western Label Co.
Wheeler-Van Label Co.
Wood, Nathan & Virkus Co., Inc.
Woodward & Tiernan Printing Co.
Wurzburg Bros.
Wynekoop Co., Walker

LABELS, MAILING AND SHIPPING

Barlett Label Co.
Cambridge Paper Box Co.
Cameo Die & Label Co.
Dennison Mfg. Co.
Eureka Specialty Printing Co.
Ever Ready Label Corp.
Fenton Label Co.
French-Bray Printing Co., The
Fuller Label & Box Co.
Horn, John
Howell & Co., F. M.
Kalamazoo Label Co.
Kittredge & Co., R. J.
Lehmann Printing & Lithographing Co.
Mason Box Co., The
May Co., The J. L.
Michigan Lithographing Co.
Milwaukee Label & Seal Co.
National Color Printing Co., Inc., The
Palm, Fechteler & Co.
Paper Affiliates Co., Inc.
Reyburn Mfg. Co., Inc., The
Robinson Tag & Label Co.
St. Louis Sticker Co.
Salisbury Mfg. Co.
E. F. Schmidt Co.
Shuman Co., The Frank G.
Tablet & Ticket Co., The
Tompkins Label Service
Unique Printed Products Co., Inc.
Wheeler-Van Label Co.
Wurzburg Bros.

LABELS, METALLIC

American Can Co.
American Label Co.
Attleboro Printing & Embossing Co.
Cambridge Paper Box Co.
Cameo Die & Label Co.
Chaspec Mfg. Co.
Dennison Mfg. Co.
Dobeckmun Co., The
Ever Ready Label Corp.
Fleming-Potter Co., Inc.
Foxon Co., The
French-Bray Printing Co., The
Fuller Label & Box Co.
Grammes & Sons, Inc., L. F.
Kittredge & Co., R. J.
Krause, Inc., Richard M.
Lehmann Printing & Lithographing Co.
Mason & Sons, F. E.
May Co., The J. L.
Milprint, Inc.
Milwaukee Label & Seal Co.
National Color Printing Co., Inc., The
Pacific Fine Arts-Pacific Label Co.
Probar Corp.
Reyburn Mfg. Co., Inc., The
Reynolds Metals Co., Inc.
Robinson Tag & Label Co.
Rode & Brand
St. Louis Sticker Co.
Shuman Co., Frank G.
Stanley Mfg. Co., The
Tablet & Ticket Co., The
United States Printing & Lithograph Co., The, American Lithographic Division
Wurzburg Bros.
Wynekoop Co., Walker

LABELS, TRANSPARENT

Consolidated Lithographing Corp.
Dennison Mfg. Co.
Dobeckmun Co., The
Ever Ready Label Corp.
Forbes Lithograph Co., The
Foxon Co., The
French-Bray Printing Co., The
Lehmann Printing & Lithographing Co.
Mason & Sons, F. E.
Milprint, Inc.
Nashua Gummed & Coated Paper Co.
Palm, Fechteler & Co.
Reyburn Mfg. Co., Inc., The
Robinson Tag & Label Co.
Shellmar Products Co.
Tablet & Ticket Co.
Tompkins Label Service
Wurzburg Bros.

LABORATORIES, RESEARCH AND TESTING
(Closures, Liners, Wrappers, etc.)

Anchor Cap & Closure Corp.
Anchor Hocking Glass Corp.
Armstrong Cork Co.
Bridgeport Testing Laboratory, Inc.
Container Testing Laboratories, Inc.
Davison Chemical Corp., The
Detroit Testing Laboratory
Little, Inc., Arthur D.
Orthmann Laboratories, Inc.
Pittsburgh Testing Laboratory

LACQUERS
(Solutions for Paper, Fabric and Wood Finishing)

Atlas Powder Co., Zapon Div., and Zapon-Brevolite Div.

Ault & Wiborg Corp.
Bakelite Corp.
Chemical Products Corp.
Commercial Solvents Corp.
Crescent Ink & Color Co.
Dewey & Almy Chemical Co. of Pa.
du Pont de Nemours & Co., Inc., E. I.
Eastman Kodak Co.
Egyptian Lacquer Mfg. Co., The
Hercules Powder Co.
Maas & Waldstein Co.
Menasha Products Co., The
Monsanto Chemical Co., Merrimac Div.
Murphy Varnish Co., Essex Varnish Division
National Adhesives Corp.
Pope & Gray, Inc.
Pyroxylin Products, Inc.
Roxalin Flexible Lacquer Co.
Sherwin-Williams Co., The
Stanley Chemical Co., The
Watson-Standard Co., The

LAMINATING, CUSTOM

American Coating Mills, Inc.
Arvey Corp., The
Cambridge Paper Box Co.
Chicago Carton Co.
Collins Mfg. Co., A. M.
Dennison Mfg. Co.
Diana Mfg. Co.
Dobeckmun Co., The
Fischer-Partelow, Inc.
Frank Associates, Inc.
Hy-Sil Mfg. Co.
Menasha Products Co., The
Michigan Carton Co.
Mor-Gan Laminating & Foliating Co.
Ralston & Co., Inc., W.
Shellmar Products Co.
Shoup-Owens, Inc.
Stensgaard & Associates Inc., W. L.
Sweetnam, Inc., Geo. H.
Walser Mfg. Co., Inc., The
Westfield River Paper Co., Inc.

LATEX, COMPOUNDED

Findley Co., The F. G.

LATEX

(Normal, Concentrated, Processed)

Arabol Mfg. Co.
Dewey & Almy Chemical Co.
du Pont de Nemours & Co., Inc., E. I.
Goodyear Tire & Rubber Co.
Heveatex Corp.
Kittredge & Co., R. J.
Union Paste Co.
U. S. Rubber Products, Inc.

LATEX, TRANSPARENT

Goodyear Tire & Rubber Co.

LEATHER, IMITATION

Aldine Paper Co.
American Coating Mills, Inc.
Atlas Powder Co., Zapon Div., and Zapon-Brevolite Div.
Bakelite Corp. (Revolite)
Bradner Smith & Co.
Chase & Co., L. C.
Dejonge & Co., Louis
du Pont de Nemours & Co., Inc., E. I.
Griffin, Campbell, Hayes, Walsh, Inc.
Hampden Glazed Paper & Card Co.
Hazen Paper Co.
Hinkson Paper Co.
Holliston Mills, Inc., The
Holyoke Coated & Printed Paper Co.
Hughes & Hoffman
Keratol Co., The
Kimberly-Clark Corp.
Marvellum Co., The
Matthias Paper Corp.
Nashua Gummed & Coated Paper Co.
National Coated Paper Corp.
Paper Affiliates Co., Inc.
Peerless Roll Leaf Co., Inc.
Permatex Fabrics Co.
Plastic Coating Corp.
Premoid Co.
Pyrotex Leather Co.
Revolite Corp.
Riegel Paper Corp.
Standard Textile Products Co.
Textileather Corp.
United Cotton Products Co.
United Mfg. Co.
U. S. Rubber Products, Inc.
Walther & Co., Inc.
Whiting Co., Inc., C. R.
Williams & Co., Inc., Chas. W.

LINERS

(Box, Barrel and Bag)

Angier Corp.
Arkell Safety Bag Co.
Bemis Bros. Bag Co.
Bradner Smith & Co.
Central States Paper & Bag Co., Inc.
Consolidated Paper Co.
Container Corp. of America
Continental Color Corp.
Eddy Paper Corp., The
Edgewater Paper Co.
Equitable Paper Bag Co., Inc.
Fort Orange Paper Co.
Gair Co., Inc., Robert
Gardner-Richardson Co., The
Goodyear Tire & Rubber Co.
Hamersley Mfg. Co., The
Hinde & Dauch Paper Co.
International Paper Products Corp.
Kalamazoo Vegetable Parchment Co.
Kennedy Car Liner & Bag Co.
Kieckhefer Container Co.
Kimberly-Clark Corp.
Matthias Paper Corp.
Owens-Illinois Pacific Coast Co.
Paper Service Co., The
Paterson Parchment Paper Co.
Pioneer Paper Stock Co.
Rexford Paper Co.
Reynolds Metals Co., Inc.
Rhinelander Paper Co.
Riegel Paper Corp.
Rockford Fibre Container Co.
Safepack Mills
Sherman Paper Products Co.
Sweetnam, Inc., Geo. H.
Traver Corp.
Union Bag & Paper Corp.
Westfield River Paper Co., Inc.

LINERS, CAP

Aluminum Co. of America
Anchor Cap & Closure Corp.
Armstrong Cork Co., Closure Division
Bond Mfg. Corp., Inc.
Dewey & Almy Chemical Co.
General Felt Products, Inc.
Gutmann & Co., Ferdinand
Mundet Cork Corp.
Owens-Illinois Glass Co.
Phoenix Metal Cap Co.
Reynolds Metals Co., Inc.

LITHOGRAPHERS

American Bank Note Co.
American Colortype Co.
American Label Co.
American Lithographic Division of The United States Printing & Lithograph Co.
Art Gravure Corp.
Arvey Corp., The
Atlantic Litho. & Ptg. Division of The United States Printing & Lithograph Co.
Blum, Emery
Brett Litho. Co.
Brooks Bank Note Co.
Brooks & Porter, Inc.
Brown & Bigelow, Inc.
Burt Co., Inc., F. N.
Calvert Litho. Co.
Cambridge Paper Box Co.
Central Lithograph Co., The
Consolidated Lithographing Corp.
Cupples Hesse Envelope & Litho. Co.
Dennison Mfg. Co.
Diamond Press, Inc., Display-Rite Division
Donaldson Litho. Division of The United States Printing & Lithograph Co.
Edwards & Deutsch Litho. Co.
Einson-Freeman Co., Inc.
Erie Litho. & Printing Division of The U. S. Printing & Lithograph Co.
Eureka Specialty Printing Co.
Fairchild Corp., E. E.
Federal Litho. Co.
Fitzhugh, Inc., Wm. W.
Fleming-Potter Co., Inc.
Forbes Lithograph Co., The
Gamse Lithographing Co., Inc.
Genesee Valley Litho. Co.
Goes Litho. Co.
Gugler Litho. Co.
Haass Litho. Co., Inc.
Heywood Co., Inc., R. R.
Kaumagraph Co.
Ketterlinus Litho. Mfg. Co.
Kindred, MacLean & Co., Inc.
Lebanon Paper Box Co., Inc.
Lord Baltimore Press
McCandlish Litho. Corp.
Magill-Weinsheimer Co.
Meyercord Co.
Michaelson Lithograph Co.
Michigan Litho. Co.
Milprint, Inc.
Nalco, Inc.
National Color Printing Co., Inc., The
National Folding Box Co.
National Printing & Engraving Co.
National Process Co., Inc., The
Nevins-Church Press
Niagara Lithograph Co.
Northwestern Litho. Co.
Oberly & Newell Litho. Corp.
Offset Gravure Corp.
Palmer Advertising Service Division of The United States Printing & Lithograph Co.
Pictorial Paper Package Corp.
Polygraphic Co. of America, Inc.
Powers Division, W. F., of The United States Printing & Lithograph Co.
Quad-Color, Inc.
Regensteiner Corp.
Reynolds & Reynolds Co.
Rochester Folding Box Co.
Rode & Brand
Rossotti Lithographing Co., Inc.
Sale Litho. Co.
Schmidt Co., E. F.
Schmidt Litho. Co.
Schmidt Lithographing, Theo. A., Division of the United States Printing & Lithograph Co.
Schmitt & Co., Inc., Geo.
Schultz & Co., H. J.
Snyder & Black, Inc.
Standard Printing Co.
Stecher-Traung Lithograph Corp.
Stensgaard & Associates, W. L.
Strobridge Litho. Co.
Stubbs Corp.
Trautmann, Bailey & Blampey
United States Printing & Litho. Co., The
Waddill Printing & Litho. Co.
Walker Litho. Co.
Weil Sons Litho. Co., David
Wilmanns Bros. Co.
Wurzburg Bros.
Woodward & Tiernan Printing Co.
Zipprodt, Inc.

LITHOGRAPHERS, METAL

Aluminum Co. of America
American Can Co.
Anchor Cap & Closure Corp.

Burdick & Son, Inc.
Clark Co., Inc., Geo. V.
Clark Mfg. Co., J. L.
du Pont de Nemours & Co., Inc., E. I.
Grammes & Sons, Inc., L. F.
Heekin Can Co.
National Can Corp.
Owens-Illinois Can Co.
Owens-Illinois Glass Co.
Phoenix Metal Cap Co.
Robertson Steel & Iron Co., W. F.
Wheeling Corrugating Co., Steel Container Div.
White Cap Co.

MACHINES, AUTOMATIC PRINTING

American Aluminum Ware Co.
Amsco Packaging Machinery, Inc.
Chambon Corp.
Haida Engineering Co.
Henschel Mfg. Co., C. B.
Hudson-Sharp Machine Co.
Klingrose Mach. Corp.
L. C. Machinery Co., Inc.
Marconetti, Inc., A. E.
Markem Machine Co.
Meisel Press Mfg. Co.
Package Machinery Co.
Package Sealing & Label Co.
Potdevin Machine Co.
Printcote Co., Inc.
Saranac Machine Co.
Smithe Machine Co., Inc., F. L.
Specialty Automatic Machine Co.
Staude Mfg. Co., E. G.
Stokes & Smith Co.
U. P. M. Kidder Press Co.
Waldron Corp., John

MACHINES, AUTOMATIC WEIGHING, DRY FILLING

(Gross and Net Weight—Volumetric)

American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Arenco Machine Co., Inc.
Automatic Scale Co., Inc.
Brown Bag Filling Machine Co.
Consolidated Packaging Machinery Corp.
Ferguson Co., J. L.
Frank Machine Works, Julius
Goat Co., Inc., The Fred
Gump Co., B. F.
Johnson Automatic Sealer Co., Ltd.
Modern Machine Shop, The
National Packaging Machinery Co.
Pneumatic Scale Corp., Ltd.
Redington Co., F. B.
Richardson Scale Co.
Rose Bros. (Gainsborough), Ltd.
Stokes Machine Co., F. J.
Stokes & Smith Co.
Syntron Company
Toledo Scale Co.
Triangle Package Machinery Co.
United States Automatic Box Machinery Co., Inc.
Weigh Right Automatic Scale Co.

MACHINES, BAG FILLING AND SEALING

Acme-Staple Co.
American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Arenco Machine Co., Inc.
Automatic Packaging Corp.
Automatic Scale Co., Inc.
Bagpak, Inc.
Bemis Bros. Bag Co.
Betner Co., Benj. C.
Bostitch, Inc.
Brown Bag Filling Machine Co., The
Consolidated Packaging Machinery Corp.
Container Equipment Corp.
Dexter Folder Co.
Ferguson Co., J. L.
Frank Machine Works, Julius
Goat Co., Inc., The Fred
Gump Co., B. F.
Ideal Stitcher & Mfg. Co.
Ivers-Lee Co., The
Miller Wrapping & Sealing Machine Co.
Modern Machine Shop, The
National Packaging Machinery Co.
Package Machinery Co.
Peters Machinery Co.
Pneumatic Scale Corp., Ltd.
Redington Co., F. B.
Rose Bros. (Gainsborough), Ltd.
Royal & Co., Thomas M. (Sealing)
Saranac Machine Co.
Stokes Machine Co., F. J.
Stokes & Smith Co.
Syntron Company
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co., Inc.

MACHINES, BAG FLOUR PACKING AND WEIGHING

Arenco Machine Co., Inc.
Consolidated Packaging Machinery Corp.
Ferguson Co., J. L.
Gump Co., B. F.
Pneumatic Scale Corp., Ltd.
Richardson Scale Co.
Stokes & Smith Co.
Triangle Package Machinery Co.

MACHINES, BAG MAKING

(Cellulose Envelope, Satchel Bottom, Window Patching, Paper, etc.)

American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Arenco Machine Co., Inc.
Container Equipment Corp.
Goat Machine Co., Inc., The Fred
Goodyear Tire & Rubber Co.
Haida Engineering Co.
Henschel Mfg. Co., C. B.
Hudson-Sharp Machine Co. (Cellulose Envelope)
International Paper Box Machine Co.
Ivers-Lee Co.
L. C. Machinery Co., Inc.
Miller Wrapping & Sealing Machine Co.
National Packaging Machinery Co.
Package Machinery Co.
Parrish, Asa L.
Peters Machinery Co.
Pneumatic Scale Corp. Ltd.
Potdevin Machine Co.
Rose Bros. (Gainsborough), Ltd.
Scandia Mfg. Co.
Smith & Winchester Mfg. Co.
Smithe Machine Co., Inc., F. L.
Staude Mfg. Co., E. G.
Stokes & Smith Co.
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co., Inc.
Waldron Corp., John
Weber & Co., H. G.
Wrap-Ade Machine Co., Inc. (Cellulose Envelope)

MACHINES, BAG SEWING

Bagpak, Inc.
Consolidated Packaging Machinery Corp.

MACHINES, BANDING

Acme Steel Co.
Amsco Packaging Machinery, Inc.
Miller Wrapping & Sealing Machine Co.
Parry Machine Co., Inc., Samuel R.
U. S. Automatic Box Machinery Co., Inc.

MACHINES, BANDING CIGAR

Colton Co., Arthur
Consolidated Lithographing Corp.
International Cigar Machinery Co.
Miller Wrapping & Sealing Machine Co.
New Jersey Machine Corp.

MACHINES, BOTTLE CAPPING AND SEALING

Aluminum Seal Co.
American Seal-Kap Corp.
Anchor Cap & Closure Corp.
Consolidated Packaging Machinery Corp.
Crown Cork & Seal Co., Inc.
Elgin Mfg. Co.
Filler Machine Co., Inc., The
Haskins Co., R. G.
Horix Manufacturing Co.
Kiefer Machine Co., The Karl
Liquid Carbonic Corp., The
National Packaging Machinery Co.
Owens-Illinois Glass Co.
Package Machinery Co.
Pneumatic Scale Corp., Ltd.
Scientific Filter Co.
Stokes & Smith Co.
U. S. Automatic Box Machinery Co., Inc.
U. S. Bottlers Machinery Co.
White Cap Co.
Williams Sealing Corp.

MACHINES, BOTTLE CLEANING

(Compressed Air)

Filler Machine Co., Inc., The
Kiefer Machine Co., The Karl
Pneumatic Scale Corp., Ltd.
U. S. Bottlers Machinery Co.

MACHINES, BOTTLE CLEANING

(Vacuum)

Kiefer Machine Co., Karl
Pneumatic Scale Corp., Ltd.
U. S. Bottlers Machinery Co.

MACHINES, BOTTLE CORKING

Ermold Co., Edward
Horix Mfg. Co.
Kiefer Machine Co., The Karl
Pneumatic Scale Corp., Ltd.
U. S. Bottlers Machinery Co.

MACHINES, BOTTLE FILLING

(Automatic and Semi-Automatic)

Arenco Machine Co., Inc.
Colton Co., Arthur
Crown Cork & Seal Co., Inc.
Elgin Mfg. Co.
Ferguson Co., J. L.
Filler Machine Co., Inc., The
Gump Co., B. F.
Horix Mfg. Co.
Ivers-Lee Co.
Kiefer Machine Co., The Karl
Liquid Carbonic Corp.
Pneumatic Scale Corp., Ltd.
Richardson Scale Co.
Scientific Filter Co.
Stokes Machine Co., F. J.
Stokes & Smith Co.
Toledo Precision Devices, Inc.
Toledo Scale Co.
Triangle Package Machinery Co.
U. S. Bottlers Machinery Co.
Vol-U-Meter Co., Inc., The

MACHINES, BOTTLE FILLING

(Automatic and Semi-Automatic for Dry Products)

Amsco Packaging Machinery, Inc. (semi-automatic)

Automatic Scale Co., Inc.
Colton Co., Arthur
Consolidated Packaging Machinery Corp.
Ferguson Co., J. L.
Gump Co., B. F.
Modern Machine Shop, The
National Packaging Machinery Co.
Pneumatic Scale Corp., Ltd.
Richardson Scale Co.
Stokes Machine Co., F. J.
Stokes & Smith Co.
Syntron Company
Triangle Package Machinery Co.
United States Automatic Box Machinery Co., Inc.

MACHINES, BOTTLE WASHING
(Soaking and Rinsing)

Elgin Mfg. Co.
Horix Mfg. Co.
Kiefer Machine Co., The Karl
Liquid Carbonic Corp., The
Pneumatic Scale Corp., Ltd.
Stokes Machine Co., F. J.
U. S. Bottlers Machinery Co.
Yundt Co., Michael

MACHINES, BOXBOARD PRINTING

Arenco Machine Co., Inc.
Beck Machine Co., Charles
Chambon Corp.
Continental Color Corp.
Haida Engineering Co.
Hooper Co., F. X.
Hudson-Sharp Machine Co.
International Paper Box Machine Co.
Klingrose Machine Corp.
Knowlton Co., M. D.
Langston Co., Samuel M.
L. C. Machinery Co., Inc.
Markem Machine Co.
Meisel Press Mfg. Co.
New Jersey Machine Corp.
Parry Machine Co., Inc., Samuel R.
Potdevin Machine Co.
Printcote Co., Inc., The
Specialty Automatic Machine Co.
Standard-Knapp Corp.
Staude Mfg. Co., E. G.
Thomson National Press Co.
U. P. M. Kidder Press Co.

MACHINES, BOX COLLAPSING

International Paper Box Machine Co.
Meisel Press Mfg. Co.
National Packaging Machinery Co.
Specialty Automatic Machine Co.
U. S. Automatic Box Machinery Co., Inc.

MACHINES, BOX FOLDING, GLUING, STITCHING

Acme Staple Co.
Bostitch, Inc.
Chambon Corp.
Container Equipment Corp.
Dexter Folder Co.
Ferguson Co., J. L.
Heller Co., The
Ideal Stitcher & Mfg. Co.
International Paper Box Machine Co.
Knowlton Co., M. D.
Miller Wrapping & Sealing Machine Co.
National Metal Edge Box Co.
National Packaging Machinery Co.
New Jersey Machine Corp.
Parry Machine Co., Inc., Samuel R.
Pneumatic Scale Corp. (Box Folding & Gluing)
Rose Bros. (Gainsborough), Ltd.
Saranac Machine Co.
Specialty Automatic Machine Co.
Staude Mfg. Co., E. G.
Stokes & Smith Co.
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co. Inc.

MACHINES, BOX REINFORCEMENT
(Band and Wire Strapping)

Acme Steel Co.
Gerrard Co., Inc., The
Knowlton Co., M. D.
National Metal Edge Box Co.
New Jersey Machine Corp.
Signode Steel Strapping Co.
Stanley Works, The, Steel Strapping Div.
Tennant & Sons Co., C.

MACHINES, BOX STRAPPING

See Box Strapping

MACHINES, BOX WINDOW

Chambon Corp.
International Paper Box Machine Co.
L. C. Machinery Co., Inc.
New Jersey Machine Corp.
Smithe Machine Co., Inc., F. L.
Staude Mfg. Co., E. G.

MACHINES, BRONZING

Christensen Machine Co.
Henschel Mfg. Co., C. B.
Meisel Press Mfg. Co.
Pauli Corp., Karl
Rutherford Machinery Co., Div. General Printing Ink Corp.
U. P. M. Kidder Press Co.

MACHINES, BUNDLE TYING
(String)

Acme Steel Co.
Amsco Packaging Machinery, Inc. (Paper)
Bunn Co., B. H.
Goat Co., Inc., Fred F.
International Paper Box Machine Co.
National Bundle Tyer Co.
Package Machinery Co.
Potdevin Machine Co.

MACHINES, BUNDLE TYING
(Wire Strapping)

Acme Steel Co.
Gerrard Co., Inc.
Signode Steel Strapping Co.
Stanley Works, The Steel Strapping Div.
Tennant & Sons Co., C.

MACHINES, CAN CAPPING

Anchor Cap & Closure Corp.
Consolidated Packaging Machinery Corp.
Continental Can Co., Inc.
Crown Can Co., The
Elgin Mfg. Co.
Ferguson Co., J. L.
Filler Machine Co., Inc.
Haskins Co., R. G.
Heekin Can Co., The
Kiefer Machine Co., The Karl
Knowlton Co., M. D.
National Can Corp.
National Packaging Machinery Co.
Phoenix Metal Cap Co.
Pneumatic Scale Corp., Ltd.
Scientific Filter Co.
Stokes Machine Co., F. J.
U. S. Automatic Box Machinery Co., Inc.
U. S. Bottlers Machinery Co.
Williams Sealing Corp.

MACHINES, CAN CLOSING AND SEALING

American Can Co.
Consolidated Packaging Machinery Corp.
Continental Can Co., Inc.
Crown Can Co., The
Dewey & Almy Chemical Co.
Elgin Mfg. Co.
Ferguson Co., J. L.
Gates Paper Co., Ltd.
Heekin Can Co., The
Kiefer Machine Co., The Karl
Knowlton Co., M. D.
National Can Corp.
Pneumatic Scale Corp., Ltd.
R. C. Can Co.
U. S. Bottlers Machinery Co.
Williams Sealing Corp.

MACHINES, CAN FILLING

American Can Co.
Amsco Packaging Machinery, Inc.
Automatic Scale Co., Inc.
Bostitch, Inc.
Brown Bag Filling Machine Co.
Colton Co., Arthur
Consolidated Packaging Mach. Corp.
Continental Can Co., Inc.
Crown Can Co., The
Elgin Mfg. Co.
Ferguson Co., J. L.
Filler Machine Co., Inc., The
Gump Co., B. F.
Heekin Can Co., The
Horix Manufacturing Co.
Kiefer Machine Co., The Karl
Modern Machine Shop, The
National Packaging Machinery Co.
Pneumatic Scale Corp., Ltd.
Rose Bros. (Gainsborough), Ltd.
Scientific Filter Co.
Stokes Machine Co., F. J.
Stokes & Smith Co. (Dry Products)
Toledo Scale Co.
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co., Inc.
U. S. Bottlers Machinery Co.
Vol-U-Meter Co., Inc.

MACHINES, CAN LABELING

Burt Machine Co.
Ermold Co., Edward (Spot)
Ferguson Co., J. L.
Knowlton Co., M. D.
Parry Machine Co., Inc., Samuel R.
Pneumatic Scale Corp. Ltd.
Redington Co., F. B.
Standard-Knapp Corp.
U. S. Bottlers Machinery Co.

MACHINES, CAN LINING

Ams Machine Co., Max
Cameron Can Machinery Co.
Dewey & Almy Chemical Co.
Knowlton Co., M. D.

MACHINES, CAP & COVER LINING

Dewey & Almy Chemical Co.

MACHINES, CAPSULE, FILLING & CAPPING

Colton Co., Arthur
Stokes Machine Co., F. J.
Triangle Package Machinery Co.

MACHINES, CAPSULE WRAPPING

Ivers-Lee Co., The
Modern Machine Shop, The
Stokes & Smith Co.

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MACHINES, CARTON, AND PAPER BOXMAKING

Acme Staple Co.
American Machine & Foundry Co.
Atlantic Carton Corp.
Beck Machine Co., Chas.
Bostitch, Inc.
Chambon Corp.
Dexter Folder Co.
Ferguson Co., J. L.
Goat Co., Inc., The Fred
Ideal Stitcher & Mfg. Co.
Inman Manufacturing Co., Inc.
International Paper Box Machine Co.
Knowlton Co., M. D.
L. C. Machinery Co., Inc.
Meisel Press Mfg. Co.
National Metal Edge Box Co.
National Packaging Machinery Co.
New Jersey Machine Corp.
Package Machinery Co.
Parry Machine Co., Inc., Samuel R.
Peters Machinery Co.
Pneumatic Scale Corp., Ltd.
Rose Bros. (Gainsborough), Ltd.
Saranac Machine Co.
Self-Locking Carton Co.
Specialty Automatic Machine Co.
Staude Manufacturing Co., E. G.
Stokes & Smith Co.
U. S. Automatic Box Machinery Co., Inc.

MACHINES, CARTON FORMING, LINING, FILLING, FOLDING, CLOSING

American Machine & Foundry Co.
Automat Molding & Folding Co.
Automatic Scale Co. (Filling)
Bostitch, Inc.
Consolidated Packaging Machinery Corp.
Container Equipment Corp.
Continental Color Corp.
Dexter Folder Co.
Ferguson Co., J. L.
Goat Co., Inc., The Fred
International Paper Box Machine Co.
Johnson Automatic Sealer Co., Ltd.
Knowlton Co., M. D.
Morris Packaging Equipment Co.
National Folding Box Co.
National Metal Edge Box Co.
National Packaging Machinery Co.
Peters Machinery Co.
Pneumatic Scale Corp., Ltd.
Redington Co., F. B.
Rose Bros. (Gainsborough), Ltd.
Stokes & Smith Co.
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co., Inc.

MACHINES, CARTON LOADING

Alvey-Ferguson Co., The
American Machine & Foundry Co.
Automat Molding & Folding Co., The
Container Equipment Corp.
Ferguson Co., J. L.
Frazier & Son
Goat Co., Inc., The Fred
Jones & Co., Inc., R. A.
Morris Packaging Equipment Co.
National Packaging Machinery Co.
Peters Machinery Co.
Pneumatic Scale Corp., Ltd.
Redington Co., F. B.
Rose Bros. (Gainsborough), Ltd.
Standard-Knapp Corp.
Stokes & Smith Co.
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co., Inc.

MACHINES, CARTON PARAFFINING

Hudson-Sharp Machine Co.
International Paper Box Machine Co.
Knowlton Co., M. D.
L. C. Machinery Co., Inc.
Potdevin Machine Co.
Rose Bros. (Gainsborough), Ltd.
Saranac Machine Co.
Specialty Automatic Machine Co.

MACHINES, CASE SEALING

Burt Machine Co.
Ferguson Co., J. L.
Heekin Can Co., The
Kiefer Machine Co., The Karl
Knowlton Co., M. D.
Parry Machine Co., Inc., Samuel R.
Standard-Knapp Corp.

MACHINES, CELLULOSE TUBE MAKING

Amsco Packaging Machinery, Inc.
Goodyear Tire & Rubber Co., Inc.
Ivers-Lee Co., The
Knowlton Co., M. D.
Potdevin Machine Co.
See-Thru Container Corp.
Stokes & Smith Co.
Wrap-Ade Machine Co., Inc.

MACHINES, COATING
(Lacquer and Varnish)

Cameron Machine Co.
Chambers Bros. Co.
Chambon Corp.
Colton Co., Arthur
Container Equipment Corp.
Haida Engineering Co.
Hudson-Sharp Machine Co.
Klingrose Machine Corp.
Knowlton Co., M. D.
L. C. Machinery Co., Inc.
Miller, Inc., Bert C.
New Jersey Machine Corp.
Potdevin Machine Co.
Printcote Co., Inc., The
Saranac Machine Co.
Stanley Chemical Co.
Wagner Litho. Machinery Co., Charles
Waldron Corp., John

MACHINES, COLLAPSIBLE TUBE FILLING AND SEALING

Arenco Machine Co., Inc.
Colton Co., Arthur
Kiefer Machine Co., The Karl
Peerless Tube Co.
Standard Specialty & Tube Co.
Stokes Machine Co., F. J.
Wirz, Inc., A. H.

MACHINES, CONTAINER SEALING
(Gummed Tape)

Arenco Machine Co., Inc.
Better Packages, Inc.
Container Equipment Corp.
Diagraph-Bradley Stencil Machine Corp.
Ever Ready Label Corp.
Gummed Products Co., The
Gummed Tape & Devices Co.
Gump Co., B. F.
Knowlton Co., M. D.
Link & Co., Inc., L.
Metal Specialties Co.
Nashua Gummed & Coated Paper Co.
Peters Machinery Co.
Potdevin Machine Co.
Rose Bros. (Gainsborough), Ltd.
Weigh Right Automatic Scale Co.

MACHINES, CONTAINER SEALING
(Staples and Wire)

Acme Staple Co.
Bostitch, Inc.
Dexter Folder Co.
Harris-Seybold-Potter Co., Seybold Div.
Heller Co., The
Ideal Stitcher & Mfg. Co.
Morrison Co., J. L.
Saranac Machine Co.

MACHINES, COTTON INSERTING

Lakso Company, The

MACHINES, COUNTING

Amsco Packaging Machinery, Inc.
Colton Co., Arthur
Container Equipment Corp.
Ivers-Lee Co., The
Parry Machine Co., Inc., Samuel R.
Redington Co., F. B.
Richardson Scale Co.
Specialty Automatic Machine Co.
Stokes Machine Co., F. J.
Toledo Precision Devices, Inc.
Toledo Scale Co.
U. S. Automatic Box Machinery Co., Inc.
Veeder-Root Co.

MACHINES, COUNTING & FILLING
(Tablets, Capsules)

U. S. Automatic Box Machinery Co., Inc.

MACHINES, CREPING

Hudson-Sharp Machine Co.
Printcote Co., Inc.
Waldron Corp., John

MACHINES, CRIMPING AND SEALING
(Transparent Cellulose)

American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Colton Co., Arthur
Container Equipment Corp.
Frank Machine Works, Julius
Gruenberg Electric Co.
Heat-Seal-It Co.
Ivers-Lee Co., The
Knowlton Co., M. D.
Miller Wrapping & Sealing Machine Co.
Simplex Wrapping Machine Co.
Stokes & Smith Co.
Triangle Package Machinery Co.
Wrap-Ade Machine Co., Inc.

MACHINES, DOMING
(Boxes)

Knowlton Co., M. D.
New Jersey Machine Corp.
Parry Machine Co., Inc., Samuel R.

MACHINES, EMBOSSING

Barnard Mfg. Co., Paul J.
Dornbusch Agency, Inc., The
Ermold Co., Edward
Griffin, Campbell, Hayes, Walsh, Inc.
Harris-Seybold-Potter Co., Seybold Div.
Hudson-Sharp Machine Co.
Klingrose Machine Corp.
Knowlton Co., M. D.
Marconetti, Inc., A. E.
Markem Machine Co.

New Jersey Machine Corp.
Peerless Roll Leaf Co., Inc.
Perkins & Son, Inc., B. F.
Potdevin Machine Co.
Printcote Co., Inc., The
Rutherford Machinery Co.
Thomson National Press Co.
Waldron Corp., John
Wood, Nathan & Virkus Co., Inc.

MACHINES, ENVELOPE MAKING

Amsco Packaging Machinery, Inc.
Harris-Seybold-Potter Co., Seybold Div.
International Paper Box Machine Co.
Ivers-Lee Co., The
Modern Machine Shop, The
Smithe Machine Co., Inc., F. L.
Staude Mfg. Co., E. G.
Transparent Wrap Machine Corp.
U. P. M. Kidder Press Co.
U. S. Automatic Box Machinery Co., Inc.
Wrap-Ade Machine Co., Inc.

MACHINES, FIBRE CAN FILLING, SEALING AND CLOSING

American Can Company
American Machine & Foundry Co.
Automatic Scale Co. (Filling)
Bostitch, Inc.
Consolidated Packaging Machinery Corp.
Ferguson Co., J. L.
Gump Co., B. F.
Horix Mfg. Co.
Knowlton Co., M. D.
Lily Tulip Cup Corp.
National Packaging Machinery Co.
New Jersey Machine Corp.
Pneumatic Scale Corp., Ltd.
Stokes Machine Co., F. J.
Stokes & Smith Co.
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co., Inc.
U. S. Bottlers Machinery Co.

MACHINES, FIBRE CAN MAKING

American Can Co.
Ferguson Co., J. L.
Hudson-Sharp Machine Co.
Knowlton Co., M. D.
Langston Co., Samuel M.
L. C. Machinery Co., Inc.
New Jersey Machine Corp.
Specialty Automatic Machine Co.
Staude Mfg. Co., E. G.

MACHINES, FLAT BED CUTTING

Harris-Seybold-Potter Co., Seybold Div.

MACHINES, FLAT KNIFE GRINDING

Harris-Seybold-Potter Co., Seybold Div.

MACHINES, FOLDING

Dexter Folder Co.
Ferguson Co., J. L.
Gump Co., B. F.
Hudson Sharp Machine Co.
Knowlton Co., M. D.
Pneumatic Scale Corp., Ltd.
Printcote Co., Inc.
Saranac Machine Co.
Staude Mfg. Co., E. G.

MACHINES, GLUING
(For Label, Wraps, etc.)

American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Burt Machine Co.
Economic Machinery Co.
Ever Ready Label Corp.
Ferguson Co., J. L.
Grammes & Sons, Inc., L. F.
Haida Engineering Co.
Knowlton Co., M. D.
Liquid Carbonic Corp., The
Miller Wrapping & Sealing Machine Co.
National Packaging Machinery Co.
New Jersey Machine Corp.
Parry Machine Co., Inc., Samuel R.
Pneumatic Scale Corp., Ltd.
Potdevin Machine Co.
Printcote Co., Inc.
Redington Co., F. B.
Rose Bros. (Gainsborough), Ltd.
Scientific Filter Co.
Staude Mfg. Co., E. G.
Stokes & Smith Co.
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co., Inc.
U. S. Bottlers Machinery Co.
Weigh Right Automatic Scale Co.

MACHINES, GRANULATING

Amsco Packaging Machinery, Inc.
Colton Co., Arthur
Gump Co., B. F.
Stokes Machine Co., F. J.

MACHINES, GUMMED TAPE MOISTENING

Better Packages, Inc.
Bradner Smith & Co.
Chippewa Paper Products Corp.
Container Equipment Corp.
Diagraph-Bradley Stencil Machine Corp.
Edgewater Paper Co.
Ever Ready Label Corp.
Gummed Products Co., The
Gummed Tape & Devices Co.
Knowlton Co., M. D.
Link & Company, Inc., L.
McLaurin-Jones Co.
Metal Specialties Co.
Mid-States Gummed Paper Co.
Nashua Gummed & Coated Paper Co.
Nashua Package Sealing Co., Inc.
Seymour Products Co., The

MACHINES, HEAT SEALING
(Transparent Cellulose)

American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Container Equipment Corp.
Ferguson Co., J. L.
Frank Machine Works, Julius
Hayssen Mfg. Co.
Heat-Seal-It Co.
Ivers-Lee Co., The
Johnson Automatic Sealer Co., Ltd.
Miller Wrapping & Sealing Machine Co.
National Packaging Machinery Co.
New Jersey Machine Corp.
Package Machinery Co.
Potdevin Machine Co.
Redington Co., F. B.
Rose Bros. (Gainsborough), Ltd.
Seal, Inc.
Stokes Machine Co., F. J.
Stokes & Smith Co.
Sylvania Industrial Corp.
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co., Inc.
Waldron Corp., John
Wrap-Ade Machine Co., Inc.

MACHINES, LABELING

Acme Staple Co.
American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Arenco Machine Co., Inc.
Better Packages, Inc.
Burt Machine Co.
Container Equipment Corp.
Economic Machinery Co.
Ermold Co., Edward
Ever Ready Label Corp.
Ferguson Co., J. L.
Haida Engineering Co.
Knowlton Co., M. D.
Liquid Carbonic Corp., The
New Jersey Machine Corp. (Round Can)
Package Machinery Co.
Parry Machine Co., Inc., Samuel R.
Pneumatic Scale Corp., Ltd.
Potdevin Machine Co.
Redington Co., F. B.
Rose Bros. (Gainsborough), Ltd.
Rutherford Machinery Co.
Scientific Filter Co.
Standard-Knapp Corp.
Staude Mfg. Co., E. G.
Stokes & Smith Co.
U. S. Bottlers Machinery Co.

MACHINES, LAMINATING
(Cellulose)

Cameron Machine Co.
Chambon Corp.
Haida Engineering Co.
Henschel Mfg. Co., C. B.
Hudson-Sharp Machine Co.
Klingrose Machine Corp.
Knowlton Co., M. D.
L. C. Machinery Co., Inc.
Meisel Press Mfg. Co.
Miller, Inc., Bert C.
New Jersey Machine Corp.
Parry Machine Co., Inc., Samuel R.
Potdevin Machine Co.
Printcote Co., Inc., The
Seal, Inc.
Waldron Corp., John

MACHINES, LIQUID FILLING

Alsop Engineering Corp.
Colton Co., Arthur
Crandall Can Filler Machine Co.
Crown Cork & Seal Co., Inc.
Elgin Mfg. Co.
Ertel Engineering Corp.
Ferguson Co., J. L.
Filler Machine Co., Inc.
Horix Mfg. Co.
Kiefer Machine Co., The Karl
Liquid Carbonic Corp., The
Pneumatic Scale Corp., Ltd.
Richardson Scale Co.
Scientific Filter Co.
Stokes Machine Co., F. J.
Toledo Precision Devices, Inc.
U. S. Bottlers Machinery Co.
Vol-U-Meter Co., Inc.

MACHINES, METAL CAN MAKING

Ams Machine Co., Max
Bliss Co., E. W.
Cameron Can Machinery Co.
Colton Co., Arthur

MACHINES, METAL EDGE STAYING
(For Boxes and Cartons)

National Metal Edge Box Co.

MACHINES, MILK BOTTLE HOODING

Aluminum Seal Co.
American Seal-Kap Corp.

L. C. Machinery Co., Inc.
Package Machinery Co.

MACHINES, MILK BOTTLE SEALING-METAL CLOSURES

Crown Cork & Seal Co.

MACHINES, NUMBERING

American Numbering Machine Co.
American Perforater Co.
Bates Mfg. Co., The
Ferguson Co., J. L.
Force & Co., Inc., Wm. A.
Markem Machine Co.
Meisel Press Mfg. Co.
Miller Wrapping & Sealing Machine Co.
New Jersey Machine Corp.
Roberts Numbering Mach. Co.

MACHINES, PACKET FILLING

American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Arenco Machine Co., Inc.
Automatic Scale Co., Inc.
Bostitch, Inc.
Brown Bag Filling Machine Co., The
Consolidated Packaging Machinery Corp.
Ferguson Co., J. L.
Frank Machine Works, Julius
Goat Co., Inc., The Fred
Gump Co., B. F.
Ivers-Lee Co.
Modern Machine Shop, The
National Packaging Machinery Co.
Pneumatic Scale Corp., Ltd.
Redington Co., F. B.
Rose Bros. (Gainsborough), Ltd.
Stokes Machine Co., F. J.
Stokes & Smith Co.
Toledo Precision Devices, Inc.
Toledo Scale Co.
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co., Inc.
Weigh Right Automatic Scale Co.
Wright's Automatic Packaging Machine Co.

MACHINES, PAPER DIE CUTTING

Harris-Seybold-Potter Co., Seybold Div.

MACHINES, PAPER DRILLING

Harris-Seybold-Potter Co., Seybold Div.

MACHINES, PARTITION ASSEMBLING

Standard-Knapp Corp.

MACHINES, PREFORMING AND TABLETTING

Colton Co., Arthur
Stokes Machine Co., F. J.

MACHINES, RAISED PRINTING

Barnard Mfg. Co., Paul J.
Meisel Press Mfg. Co.
Wood, Nathan & Virkus Co., Inc.

MACHINES, REVENUE STAMP

Arenco Machine Co., Inc.
Meisel Press Mfg. Co.
New Jersey Machine Corp.
Redington Co., F. B.
Rose Bros. (Gainsborough), Ltd.

MACHINES, ROLL LEAF STAMPING

Markem Machine Co.
Peerless Roll Leaf Co., Inc.

MACHINES, ROLL SHEETING (Cellulose)

American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Beck Machine Co., Chas.
Dexter Folder Co.
Everett Machine Corp.
Ivers-Lee Co., The
Knowlton Co., M. D.
Marconetti, Inc., A. E.
Meisel Press Mfg. Co.
Miller Wrapping & Sealing Machine Co.
Parry Machine Co., Inc., Samuel R.
Peters Machinery Co.
Potdevin Machine Co.
Rose Bros. (Gainsborough), Ltd.
Saranac Machine Co.
Wrap-Ade Machine Co., Inc.

MACHINES, ROLL SLITTERS AND REWINDERS

Amsco Packaging Machinery, Inc.
Beck Machine Co., Chas.
Beloit Iron Works
Cameron Machine Co.
Chambon Corp.
Hudson-Sharp Machine Co.
Inman Mfg. Co., Inc.
Klingrose Machine Corp.
Knowlton Co., M. D.
Krause, Inc., Richard M.
Langston Co., Samuel M.
L. C. Machinery Co., Inc.
Meisel Press Mfg. Co.
Potdevin Machine Co.
Printcote Co., Inc., The
Specialty Automatic Machine Co.
Staude Mfg. Co., E. G.
U. P. M. Kidder Press Co.
Waldron Corp., John

MACHINES, SEMI-LIQUID FILLING

American Machine & Foundry Co.
Colton Co., Arthur
Elgin Manufacturing Co.
Ferguson Co., J. L.
Filler Machine Co., Inc., The
Horix Mfg. Co.
Kiefer Machine Co., The Karl
Pneumatic Scale Corp., Ltd.
Rose Bros. (Gainsborough), Ltd.
Scientific Filter Co.
Stokes Machine Co., F. J.
Stokes & Smith Co.
Toledo Precision Devices, Inc.
Toledo Scale Co.
U. S. Bottlers Machinery Co.

MACHINES, SPECIAL PACKAGING PRODUCTION

Advertisers Engraving Co.
American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Arenco Machine Co., Inc.
Cartoning Machinery Corp.
Colton Co., Arthur
Consolidated Packaging Machinery Corp.
Container Equipment Corp.
Dexter Folder Co.
Ferguson Co., J. L.
Filler Machine Co., Inc.
Frank Machine Works, Julius
General Food Package Equipment Corp.
Goat Co., Inc., Fred F.
Hudson-Sharp Machine Co.
Johnson Automatic Sealer Co., Ltd.
Knowlton Co., M. D.
Lakso Co., The
Meisel Press Mfg. Co.
National Metal Edge Box Co.
New Jersey Machine Corp.
Package Machinery Co.
Pneumatic Scale Corp., Ltd.
Printcote Co., Inc., The
Redington Co., F. B.
Rose Bros. (Gainsborough), Ltd.
Saranac Machine Co.
Smithe Machine Co., Inc., F. L.
Special Production Machines, Inc. (Div. **Pneumatic Scale Corp., Ltd.**)
Specialty Automatic Machine Co.
Standard-Knapp Corp.
Staude Mfg. Co., E. G.
Stokes Machine Co., F. J.
Stokes & Smith Co.
Triangle Package Machinery Co.
U. P. M. Kidder Press Co.
U. S. Automatic Box Machinery Co., Inc.
U. S. Bottlers Machinery Co.
Waldron Corp., John

MACHINES, STATIC ELIMINATOR

Potdevin Machine Co.
Simco Corp., The

MACHINES, TABLET BOTTLE COTTONING

Lakso Co., The

MACHINES, TABLET, COUNTING, FILLING, PACKAGING

Amsco Packaging Machinery, Inc.
Colton Co., Arthur
Ivers-Lee Co., The
Lakso Co., The
Modern Machine Shop, The
National Packaging Machinery Co.
New Jersey Machine Corp.
Package Machinery Co.
Redington Co., F. B.
Stokes Machine Co., F. J.
Stokes & Smith Co.
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co., Inc.

MACHINES, TABLET MAKING

Colton Co., Arthur
Stokes Machine Co., F. J.

MACHINES, TABLET WRAPPING

American Machine & Foundry Co.
Colton Co., Arthur
Ivers-Lee Co., The
Modern Machine Shop, The
National Packaging Machinery Co.
New Jersey Machine Corp.
Package Machinery Co.
Redington Co., F. B.
Rose Bros. (Gainsborough), Ltd.
Stokes & Smith Co.
U. S. Automatic Box Machinery Co., Inc.

MACHINES, TEA BALL AND TEA BAG, AUTOMATIC

Automatic Scale Co.
Consolidated Packaging Machinery Corp.
Pneumatic Scale Corp., Ltd.
Rose Bros (Gainsborough) Ltd.

MACHINES, TIGHT WRAPPING (For Carton Shells)

American Machine & Foundry Co.
Package Machinery Co.

Pneumatic Scale Corp., Ltd.
Rose Bros. (Gainsborough), Ltd.
Stokes & Smith Co.

MACHINES, TRANSMISSION
(Variable Speed)

Allis-Chalmers Mfg. Co.
American Engineering Co.
Gump Co., B. F.
Haida Engineering Co.
Hudson-Sharp Machine Co.
Lewellen Mfg. Co.
Link Belt Co.
New Departure Mfg. Co.
Reeves Pulley Co.
Sterling Electric Motors, Inc.

MACHINES, TUBE CUTTERS
(For Fibre Tubes or Cans)

Amsco Packaging Machinery, Inc.
Beck Machine Co., Chas.
Cameron Machine Co.
Ferguson Co., J. L.
Hudson-Sharp Machine Co.
Knowlton Co., M. D.
Langston Co., Samuel M.
Specialty Automatic Machine Co.

MACHINES, WAXING

Chambon Corp.
Haida Engineering Co.
Hudson-Sharp Machine Co.
International Paper Box Machine Co.
Klingrose Machine Corp.
Knowlton Co., M. D.
L. C. Machinery Co., Inc.
Potdevin Machine Co.
Printcote Co., Inc., The
Rose Bros. (Gainsborough), Ltd.
Specialty Automatic Machine Co.
Waldron Corp., John

MACHINES, WEIGHING
(Automatic, Net and Gross Weighers)

See Scales

MACHINES, WIRE STAPLING

Acme Staple Co.
Acme Steel Co.
Bostitch, Inc.
Bates Mfg. Co., The
Crofoot Co., J. B.
Dexter Folder Co.
Diagraph-Bradley Stencil Machine Corp.
Harris-Seybold-Potter Co., Seybold Div.
Heller Co., The
Hotchkiss Sales Co.
Ideal Stitcher & Mfg. Co.
Knowlton Co., M. D.
Markwell Mfg. Co., Inc.
National Metal Edge Box Co.
Neva-Clog Products, Inc.
Paslode Co.
Saranac Machine Co.

MACHINES, WIRE STITCHING

Acme Staple Co.
Acme Steel Co.
Bostitch, Inc.
Dexter Folder Co.
Harris-Seybold-Potter Co., Seybold Div.
Heller Co., The
Ideal Stitcher & Mfg. Co.
Knowlton Co., M. D.
Morrison Co., J. L.
National Metal Edge Box Co.
Saranac Machine Co.

MACHINES, WRAPPING
(Bread and Cake)

American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Arenco Machine Co., Inc.
Baker-Perkins Co.
Battle Creek Bread Wrapping Machine Co.
Ferguson Co., J. L.
Hayssen Mfg. Co.
Hudson-Sharp Machine Co.
Ivers-Lee Co., The
Johnson Automatic Sealer Co., Ltd.
Miller Wrapping & Sealing Machine Co.
National Bread Wrapping Machine Co.
Package Machinery Co.
Rose Bros. (Gainsborough), Ltd.
Scandia Mfg. Co.

MACHINES, WRAPPING
(Butter)

Amsco Packaging Machinery, Inc.
Automat Molding & Folding Co., The
Battle Creek Bread Wrapping Machine Co.
Miller Wrapping & Sealing Machine Co.
Morris Packaging Equipment Co.
Package Machinery Co.
Pneumatic Scale Corp., Ltd.
Redington Co., F. B.

MACHINES, WRAPPING
(Cigar)

Amsco Packaging Machinery, Inc.
Arenco Machine Co., Inc.
Colton Co., Arthur
Consolidated Lithographing Corp.
Hudson-Sharp Machine Co.
International Cigar Machinery Co.
Miller Wrapping & Sealing Machine Co.
Package Machinery Co.

MACHINES, WRAPPING
(Photo-Electric Cell for Spot Register)

American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Battle Creek Bread Wrapping Machine Co.
Hayssen Mfg. Co.
Hudson-Sharp Machine Co.
Johnson Automatic Sealer Co., Ltd.
Miller Wrapping & Sealing Machine Co.
Package Machinery Co.
Pneumatic Scale Corp., Ltd.
Redington Co., F. B.
Scandia Mfg. Co.

MACHINES, WRAPPING
(Transparent Cellulose, Glassine, Waxed Paper, etc.)

American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Battle Creek Bread Wrapping Machine Co.
Container Equipment Corp.
Ferguson Co., J. L.
Hayssen Mfg. Co.
Hudson-Sharp Machine Co.
Ivers-Lee Co., The
Johnson Automatic Sealer Co., Ltd
Miller Wrapping & Sealing Machine Co.
National Packaging Machinery Co.
Package Machinery Co.
Peters Machinery Co.
Pneumatic Scale Corp.
Redington Co., F. B.
Rose Bros. (Gainsborough), Ltd.
Scandia Mfg. Co.
Stokes & Smith Co.
U. S. Automatic Box Machinery Co., Inc.
Wrap-Ade Machine Co., Inc.

MEDICINE DISPENSERS

Anchor Cap & Closure Corp.
Colt's Patent Fire Arms Mfg. Co.
Double Duty Products, Inc.
Federal Glass Co.
Federal Tool Corp.
Food Dispenser Co., The
Kimble Glass Co.
Owens-Illinois Glass Co.
Pennsylvania Glass Products Co.
Randolph Paper Box Co., Inc.
Scovill Manufacturing Co.
Standard Specialty & Tube Co
Tyer Rubber Co.

MESH FABRICS
(For Bags and Wrappings)

Arvey Corp., The
Cottonluxe Manufacturing Co.
Pyroxylin Products, Inc.

METAL INLAYS

Aluminum Co. of America
Bronzart Metals Co.
Chaspec Mfg. Co.
Foxon Co., The
Krause, Inc., Richard M.
Plastic Inlays, Inc.
Probar Corporation
Scovill Manufacturing Co.
Seymour Products Co.

MOLDERS, CUSTOM

Accurate Molding Corp.
Ackerman Rubber & Plastic Molding Co.
Alden Products Co.
American Hard Rubber Co.
American Insulator Corp.
American Phenolic Corp.
Anchor Cap and Closure Corp.
Armstrong Cork Co., Closure Division
Associated Attleboro Mfgrs., Inc.
Atlantic Plastic & Metal Parts Co., The
Auburn Button Works, Inc.
Automatic Molded Prods. Co.
Bay State Molding Co.
Beaman Molded Prods. Co.
Berkander, Geo. F.
Boonton Molding Co.
Breeze Corp.
Bridgeport Moulded Prods. Inc.
Bryant Electric Co., Hemco Plastics Division
Butterfield, Inc., T. F.
Carbide & Carbon Chemicals Corp.
Celluloid Corp.
Chicago Die Mold Mfg. Co.
Chicago Molded Products Corp.
Cincinnati Molding Co.
Climax Mfg. & Molding Corp.
Colt's Patent Fire Arms Mfg. Co.
Compo-site, Inc.
Consolidated Molded Products Corp.
Cutler-Hammer, Inc.
Davies Molding Co., Harry
Dayton Insulating Molding Co.
Detroit Molded Prods. Co.
Diemolding Corp.
Eclipse Moulded Products Co.
Economy Fuse & Mfg. Co.
Emeloid Co., Inc.
Erie Resistor Corp.
Eureka Button Co.
Firestone Tire & Rubber Co.
General Electric Co., Plastics Dept.
General Industries Co.
General Insulate Co., Inc.
General Molding Co.
General Products Corp.
Gits Molding Corp.
Gorham Company
Grigoleit Co.
Gulliksen Mfg. Co., W. M.

XUM

Hahn Plastic & Die Cast Corp.
Hyde, A. L.
Imperial Molded Products Corp.
Industrial Molded Prods. Co.
Insulation Mfg. Co., Inc.
Insulation Prods. Co.
International Molded Plastics, Inc.
Keeler Brass Co.
Kellogg Switchboard & Supply Co.
Kuhn & Jacobs Moulding & Tool Co.
Kurz-Kasch, Inc.
Lanfare Molded Prods.
Lapin-Kurley Kew Inc.
Leviton Mfg. Co.
Liberty Molding Works
Los Angeles Molding Co.
Mack Molding Co., Inc.
Meissner Mfg. Co.
Mico Inc.
Midwest Molding & Mfg. Co.
Mills Corp., Elmer E.
Modern Plastics Corp.
Molded Insulation Co.
Molded Plastics Inc.
Molding Corp. of America
Mundet Cork Corp.
National Lock Co.
National Plastics Inc.
Niagara Insul-Bake Specialty Co., Inc.
Northern Industrial Chemical Co.
Norton Laboratories, Inc.
Oris Mfg. Co., Inc.
O'Shei, B. F.
Paulis Inc., H.
Peerless Molded Plastics Inc.
Plano Molding & Mfg. Co.
Plastic Molding Co.
Plastic Molding Corp.
Plastic Prods. Inc.
Rathbun Molding Corp.
Recto Molded Products, Inc.
Remler Co., Ltd
Reynolds Spring Co., Molded Plastics Division
Richardson Company
Royal Molding Co.
Seamless Rubber Co.
Shaw Insulator Co.
Siemon Co.
Specialty Insulation Co.
Standard Cap & Molding Co.
Stokes Rubber Co., Jos.
Synthetic Moulded Products, Inc.
Tech-Art Plastics Co.
Terkelsen Machine Co.
Thermo Plastics Inc.
Union Insulating Co.
Universal Molding Co.
Universal Plastics Corp.
Valley Molding Co.
Van Norman Molding Co.
Victory Molding Co.
Voges Mfg. Co.
Ward Plastic & Rubber Corp.
Waterbury Button Co., The
Watertown Mfg. Co.
Wheeling Stamping Co.
Windman Bros.

MOLDING COMPOUNDS, ACRYLIC RESINS

du Pont de Nemours & Co., Inc., E. I.,
Röhm & Haas Co.

MOLDING COMPOUNDS, CAST PHENOL

Bakelite Corp.
Catalin Corp.
Marblette Corp.
Monsanto Chemical Co., Plastics Div.

MOLDING COMPOUNDS, CELLULOSE ACETATE

Bakelite Corp.
Celluloid Corp.
du Pont de Nemours & Co., Inc., E. I., Plastics Dept.
Monsanto Chemical Co., Plastics Div.
Nixon Nitration Works
Tennessee Eastman Corp.

MOLDING COMPOUNDS, METHYL METHACRYLATE

du Pont de Nemours & Co., Inc., E. I.
Resinous Products & Chemical Co.
Röhm & Haas Co.

MOLDING COMPOUNDS, PHENOL FORMALDEHYDE

Bakelite Corp.
Commercial Solvents Corp.
Durez Plastics & Chemicals, Inc.
Durite Plastics
General Electric Co.
Makalot Corp.
Monsanto Chemical Co., Plastics Div.
Reilly Tar & Chemical Corp.

MOLDING COMPOUNDS, PHENOL FURFURAL

Durez Plastics & Chemicals, Inc.
Durite Plastics Inc.

MOLDING COMPOUNDS, STYRENE

Bakelite Corp.
Carbide & Carbon Chemicals Corp.
Dow Chemical Corp.
Monsanto Chemical Co., Plastics Div.
U. S. Rubber Products, Inc.

MOLDING COMPOUNDS, UREA FORMALDEHYDE

Bakelite Corp.
Beetle Products Division of American Cyanamid Co.
Plaskon Co., Inc.
Resinous Products & Chemical Co.

MOLDING COMPOUNDS, VINYL RESINS

Carbide & Carbon Chemicals Corp.
Monsanto Chemical Co., Plastics Div.

PACKAGE DESIGN CONSULTANTS

(Independent Organizations)

Advertisers Engraving Co.
Alcott, Thoner & Marsh
Allcolor Co., Inc.
Allen, Arthur S.
Arens, Egmont
Barnes & Reinecke
Berni, A.
Bryan, Goode
Cinquin, Rene
Clarke, Rene
Cole, Clarence
Cooper, R. G.
Cruze, Charles
D'Addario, Thomas
De Nina, James A.
Dreyfuss, Henry
Dryden, Helen
Epstein, Alvin
Farrell, Harry H.
Fitzhugh, Inc., Wm. W.
Frederico, Joseph B.
Furman-Gold Co., The
Grover, Frederic S.
Guild, Lurelle V. A.
Hall, Frances Cushing
Heile & Pike
Hornung, Clarence P.
Jensen, Gustav B.
Ketcham, Howard
King, Everett W.
Klarr, Samuel
Korda Graphics
Larison, Ruth Hooper
Lewis, Ben
Lucas, Mildred C.
Martial, Jacques
Maurer, Sascha A.
Muller, Hans
Nash, Ben, Inc.
Obeck, Ferdinand J.
Picken, Mary Brooks
Ressinger, Paul
Scheele, Edwin H.
Schmidt Co., E. F.
Sheldon, Roy
Sinel, Joseph
Stensgaard & Associates, Inc., W. L.
Switzer, George
Teague, Walter D.
Thelander, Clement
Ullman, Martin
Van Doren & Associates, Harold
Weeks, Wentworth
Welden, Archibald W.
Wheeler, Leonard A.
Wurzburg Bros.

PACKAGE WRAPS

See various Paper headings

PACKAGING, CUSTOM

American Perfumers Laboratories, Inc.
Toilet preparations
Arcadia Food Co.
Jelly powders, dessert powders
Arner Co.
Pills and tablets
Brown Bag Filling Machine Co.
Pills, tablets, powdered materials, nails, screws, etc., in open and envelopes
Buckeye Soda Co., The
Powder and/or granular products; either folding cartons or cans
Canada's Pride Products Co. Inc.
Cocoa and malted milk products
Comfort Mfg. Co.
Every type of package, either dry, wet, semi-solid, solid, etc.
Fergusson Laboratories
Creams, tooth pastes, etc., in collapsible tubes
Ivers-Lee Co.
Tablets, pills and capsules
Jamieson Co., C. E.
Creams, tooth paste, etc., pills, tablets and fillers of collapsible tubes
Krainin Food Corp.
Morrison Co., The
Equipped for packing in family and institutional sizes, puddings, pie-fillings and ice cream powders
Strong, Cobb & Co.
Pills, tablets, creams, tooth paste, etc., and fillers of collapsible tubes

PADS, ABSORBENT PACKING

Kimberly-Clark Corp.
Owens-Illinois Glass Co.
Pioneer Paper Stock Co.
Sweetnam, Inc., Geo. H.

PAILS, FIBRE

Bloomer Bros. Co.
Cleveland Container Co.
Container Corp. of America

Iowa Fibre Box Co.
Knowlton Co., M. D.
Lily Tulip Cup Corp.
Marathon Paper Mills Co.
Master Package Corp.
Menasha Products Co., The
National Folding Box Co.
Saranac Machine Co.
Sutherland Paper Co.

PAPER, ALKALI PROOF

Bradner Smith & Co.
Carbide & Carbon Chemicals Corp.
Champion Paper & Fibre Co., The
Fitchburg Paper Co.
Goodyear Tire & Rubber Co.
Hampden Glazed Paper & Card Co.
Kupfer Bros. Paper Co.
Menasha Products Co., The
Morart Paper Co., Inc.
Paterson Parchment Paper Co.
Plastic Coating Corp., The
Racquette River Paper Co., The
Royal Paper Corp.
Warren Co., S. D.
Westfield River Paper Co., Inc.
Whiting Co., Inc., C. R.
Williams & Co., Inc., Chas. E.
Wyomissing Glazed Paper Co.

PAPER, ANTI-TARNISH COTTON-LINED

Cottonluxe Manufacturing Co.
Eureka Mfg. Co., Inc.

PAPER, BASE (For Converters)

Champion Paper & Fibre Co.
Fitchburg Paper Co.
Warren Co., S. D.

PAPER, BOX LACE

American Lace Paper Co.
Dennison Mfg. Co.
Lebanon Paper Box Co.
Matthias Paper Corp.
Milwaukee Lace Paper Co.
Royal Paper Corp.
Sayford Co., Inc., Frank M.
U. S. Lace Paper Works
Williams & Co., Inc., Chas. W.

PAPER, CHENILLE PROCESSES

Artistic Flock Novelty Co.

PAPER, CHEVIOT

Bradner Smith & Co.
Datz & Son, A. S.
Dejonge & Co., Louis
Holyoke Coated & Printed Paper Co.
Hughes and Hoffman
Keller-Dorian Paper Co., Inc.
Kimberly-Clark Corp.
Kupfer Bros. Co.
Matthias Paper Corp.
Pejepscot Paper Co.
Ray-O-Nite Coated Paper Mills
Royal Paper Corp.
Sanderson Products, Inc.
Schulman Co., Louis
Walther & Co., Inc.
Williams & Co., Inc., Chas. W.

PAPER, CORK

Aldine Paper Co.
Armstrong Cork Co., Closure Division
Bradner Smith & Co.
Dennison Mfg. Co.
District of Columbia Paper Mills, Inc.
Dodge Cork Co., Inc.
Keller-Dorian Paper Co., Inc.
Kupfer Bros. Paper Co.
Matthias Paper Corp.
Mundet Cork Corp.
Paper Affiliates Co., Inc.
Pauli Corp., Karl
Stevens-Nelson Paper Corp.
United Mfg. Co.
Whiting, Co., Inc. C. R.,
Williams & Co., Inc., Chas. W.

PAPER, CORRUGATED FOR WINDOW TRIMMING

Capex Company, The
Excelsior Paper Specialties Co., Inc.
Gaylord Container Corp.
Inland Container Corp.
Paper Affiliates Co., Inc.
Reyburn Mfg. Co., Inc., The
Royal Paper Corp.
Sherman Paper Products Corp.

PAPER, CREPE

Aldine Paper Co., Inc.
American Tissue Mills
Dennison Mfg. Co.
Kalamazoo Vegetable Parchment Co.
Menasha Products Co., The
Reyburn Mfg. Co., Inc., The
Sweetnam, Inc., Geo. H.
Tuttle Press Co., The

PAPER, EMBOSSED METAL

Aldine Paper Co., Inc.
Aluminum Co. of America
American Foil Corp.
Artcote Papers, Inc.
Bendix Paper Co.
Ben Mont Papers, Inc.
Bradner Smith & Co.
Collins Mfg. Co., A. M.
Datz & Son, A. S.
Dejonge & Co., Louis
Foxon Co., The
Hampden Glazed Paper & Card Co.
Hazen Paper Co.
Hartford City Paper Co.
Hinkson Paper Co.
Holyoke Card & Paper Co.
Holyoke Coated & Printed Paper Co.
Hughes & Hoffman
Keller-Dorian Paper Co., Inc.
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
McLaurin-Jones Co.
Marvellum Co., The
Matthias Paper Corp.
Middlesex Products Corp.
Milprint, Inc.
Nashua Gummed & Coated Paper Co.
New England Card & Paper Co.
Orchard Paper Co.
Paper Affiliates Co., Inc.
Paper City Mfg. Co., Inc.
Pauli Corp., Karl
Plastic Coating Corp., The
Ray-O-Nite Coated Paper Mills
Reynolds Metals Co., Inc.
Royal Paper Corp.
Sanderson Products Inc.
Schulman Co., Louis
Springfield Glazed Paper Co.
Standard Rolling Mills, Inc.
Stevens-Nelson Paper Corp.
Tablet & Ticket Co., The
United Cotton Products Co.
United Mfg. Co.
Walther & Co., Inc.
Welsh Paper Co.
Whiting Co., Inc., C. R.
Whiting-Patterson Co., Inc.
Williams & Co., Inc., Chas. W.
Yorkville Paper Co., Inc.

PAPER, EXCELSIOR & SHREDDED

Ben Mont Papers, Inc.
Brooks Paper Co.
Crystal Tissue Co., The
Daniels Mfg. Co.
Dennison Mfg. Co.
Kalamazoo Vegetable Parchment Co.
La Monte & Son, George
Paterson Parchment Paper Co.
Pioneer Paper Stock Co.
Sweetnam, Inc., Geo. H.
Sylvania Industrial Corp.
Traver Corp.

PAPER, FANCY, PRINTED

Aldine Paper Co., Inc.
Bendix Paper Co.
Ben Mont Papers, Inc.
Birge & Son Co., M. H.
Bradner Smith & Co.
Chicago Printed String Co.
Kupfer Bros. Paper Co.
Collins Mfg. Co., A. M.
Crystal Tissue Co., The
Daniels Mfg. Co.
Datz & Son, A. S.
Decotone Products
Dejonge & Co., Louis
Dennison Mfg. Co.
District of Columbia Paper Mills, Inc.
Du-Tone Ribbon Corp.
Eureka Specialty Printing Co.
Fitchburg Paper Co.
Hampden Glazed Paper & Card Co.
Hartford City Paper Co.
Hazen Paper Co.
Heywood Co., Inc. R. R.
Hinkson Paper Co.
Holyoke Card & Paper Co.
Holyoke Coated & Printed Paper Co.
Hughes & Hoffman
Kalamazoo Vegetable Parchment Co.
Keller-Dorian Paper Co., Inc.
Kimberly-Clark Corp.
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
McLaurin-Jones Co.
Marvellum Co., The
Matthias Paper Corp.
Menasha Products Co., The
Micacrystal Products Co.
Morart Paper Co., Inc.
Morart Rotophot Co., Inc.
Nashua Gummed & Coated Paper Co.
National Coated Paper Corp.
New England Card & Paper Co.
Orchard Paper Co.
Paper Affiliates Co., Inc.
Paper City Mfg. Co., Inc.
Pauli Corp., Karl
Plastic Coating Corp., The
Racquette River Paper Co., The
Ray-O-Nite Coated Paper Mills
Rhinelander Paper Co.
Riegel Paper Corp.
Royal Paper Corp.
Sanderson Products Inc.
Schulman Co., Louis
Stevens-Nelson Paper Corp.
Tablet & Ticket Co., The
United Cotton Products Co.
United Mfg. Co.
Walther & Co., Inc.
Welsh Paper Co.
Whiting Co., Inc., C. R.
Whiting-Patterson Co., Inc.
Williams & Co., Inc., Chas. W.

PAPER FINISHERS (Varnish and Lacquer)

Acme Gumming & Varnishing Co.
American Finishing Co.
American Gumming Co.
Chasen & Co., Alex
Hugh J., Christie

XUM

Crawford Co., John W.
Decotone Products
Elliott & Mallery
Eureka Specialty Printing Co.
Fell Bros.
Hampden Glazed Paper & Card Co.
Hazen Paper Co.
Henschel Mfg. Co., C. B.
Hinkson Paper Co.
Holyoke Coated & Printed Paper Co.
Johnston Paper Co., The
Kellner, J.
Lithographers Finishing Co.
Lowery & Schwartz, Inc.
McCauley Finishing Co., Inc., G. H.
McCoy Label Co.
McCoy Paper Converters
McKenna & Phelps, Inc.
Merit Card Display Co.
Modica Syndicate Press
North River Labeling Co.
O'Brien Finishing Co., Inc., P. E.
O'Connor, Edw. M.
Perfect Finishing Co., Inc.
Philadelphia Label Cutting Co.
Pyrotex Leather Co.
Richardson Taylor-Globe Corp., The
Schneider Bros. Co.
Standard Finishing Co., Inc.
Superior Label Finishing Co.
Tablet & Ticket Co., The
U. S. Finishing & Mfg. Co.
Universal Label Products Co.
Walley Co., C. P.
Whiting Co., Inc., C. R.
Wiener Bros, Inc.

PAPER, FLINT GLAZED

Bradner Smith & Co.
Datz & Son, A. S.
Dejonge & Co., Louis
Dennison Mfg. Co.
Hampden Glazed Paper & Card Co.
Hazen Paper Co.
Hinkson Paper Co.
Holyoke Card & Paper Co.
Holyoke Coated & Printed Paper Co.
Hughes & Hoffman
Keller-Dorian Paper Co., The
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
Matthias Paper Corp.
Metz Paper Co.
Nevins-Church Press, The
Paper Affiliates Co., Inc.
Paper City Mfg. Co.
Ray-O-Nite Coated Paper Mills, Inc.
Royal Paper Corp.
Sanderson Products Inc.
Schulman Co., Louis
Springfield Glazed Paper Co.
United Mfg. Co.
Walther & Co., Inc.
Welsh Paper Co.
Whiting Co., Inc., C. R.
Whiting-Patterson Co., Inc.
Williams & Co., Inc., Chas. W.
Wyomissing Glazed Paper Co.
Yorkville Paper Co., Inc.

PAPER, FRICTION GLAZED

Ben Mont Papers, Inc.
Bradner Smith & Co.
Collins Mfg. Co., A. M.
Datz & Son, A. S.
Dejonge & Co., Louis
Hampden Glazed Paper & Card Co.
Hazen Paper Co.
Hinkson Paper Co.
Holyoke Card & Paper Co.
Holyoke Coated & Printed Paper Co.
Hughes & Hoffman
Keller-Dorian Paper Co.
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
McLaurin Jones Co.
Marvellum Co., The
Matthias Paper Corp.
Middlesex Products Corp.
Nashua Gummed & Coated Paper Co.
National Coated Paper Corp.
New England Card & Paper Co., Inc.
Paper Affiliates Co., Inc.
Paper City Mfg. Co.
Plastic Coating Corp., The
Ray-O-Nite Coated Paper Mills, Inc.
Royal Paper Corp.
Schulman Co., Louis
Springfield Glazed Paper Co.
United Mfg. Co.
Walther & Co., Inc.
Welsh Paper Co.
Whiting Co., Inc., C. R.
Whiting-Patterson Co., Inc.
Williams & Co., Inc., Chas. W.
Wyomissing Glazed Paper Co.

PAPER, GLASSINE
(Plain and Embossed)

Aldine Paper Co.
Ben Mont Papers, Inc.
Bradner Smith & Co.
Central Waxed Paper Co.
Chicago Printed String Co.
Daniels Manufacturing Co.
Deerfield Glassine Co.
Dennison Mfg. Co.
Detroit Wax Paper Co.
Glassine Paper Co.
Hamersley Mfg. Co., The (Plain)
Hartford City Paper Co.
Hinkson Paper Co. (Embossed)
Holyoke Coated & Printed Paper Co.
Kalamazoo Vegetable Parchment Co.
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
McDowell Paper Mills
Marvellum Co., The
Matthias Paper Corp.
Menasha Products Co., The
Milprint, Inc.
Nashua Gummed & Coated Paper Co.
Newark Paraffine & Parchment Paper Co.
Rhinelander Paper Co.
Riegel Paper Corp.
Royal Paper Corp.
Sweetnam, Inc., Geo. H.
Westfield River Paper Co., Inc.
Williams & Co., Inc., Chas. W.
Yorkville Paper Co., Inc.

PAPER, GREASEPROOF

Aldine Paper Co.
American Tissue Mills
Ben Mont Papers, Inc.
Bradner Smith & Co.
Carbide & Carbon Chemicals Corp.
Celluloid Corp.
Central Waxed Paper Co.
Crystal Tissue Co., The
Daniels Manufacturing Co. (Printed)
Deerfield Glassine Co.
Dennison Mfg. Co.
Detroit Wax Paper Co.
du Pont de Nemours & Co., Inc., E. I.
Eastman Kodak Co.
Gardner-Richardson Co., The
Glassine Paper Co.
Goodyear Tire & Rubber Co., Inc., The Pliofilm Sales Div.
Hamersley Mfg. Co., The
Hartford City Paper Co.
Hinkson Paper Co.
Kalamazoo Vegetable Parchment Co.
Kupfer Bros. Co.
McDowell Paper Mills
Marvellum Co.
Matthias Paper Corp.
Menasha Products Co.
Milprint, Inc.
Nashua Gummed & Coated Paper Co.
Newark Paraffine & Parchment Paper Co.
Paper Affiliates Co., Inc.
Paterson Parchment Paper Co.
Reynolds Metals Co., Inc.
Rhinelander Paper Co.
Riegel Paper Corp.
Royal Paper Corp.
Sweetnam, Inc., Geo. H.
Sylvania Industrial Corp.
Warren Co., S. D.
West Carrollton Parchment Co.
Westfield River Paper Co., Inc.
Williams & Co., Inc., Chas. W.
Yorkville Paper Co., Inc.

PAPER, GUMMED

Artcote Papers, Inc.
Bradner Smith & Co.
Central Paper Co.
Chicago Gummed Tape Co.
Dejonge & Co.
Dennison Mfg. Co.
Edgewater Paper Co.
Eureka Specialty Printing Co.
Gummed Products Co.
Gummed Tape & Devices Co.
Holyoke Coated & Printed Paper Co.
Keller-Dorian Paper Co., Inc.
Knowlton Co., M. D.
Kupfer Bros. Paper Co.
McLaurin-Jones Co.
Markem Machine Co.
Matthias Paper Corp.
Mid-States Gummed Paper Co.
Milprint, Inc.
Nashua Gummed & Coated Paper Co.
Paper Affiliates Co., Inc.
Paper Manufacturers Co., Inc.
Pauli Corp., Karl
Plastic Coating Corp., The
Rexford Paper Co.
Tablet & Ticket Co., The
Royal Paper Corp.
Whiting-Patterson Co., Inc.
Williams & Co., Inc., Chas. W.
Yorkville Paper Co., Inc.

PAPER, IMITATION LEATHER

Aldine Paper Co.
Atlas Powder Co., Zapon Division
Bradner Smith & Co.
Collins Mfg. Co., A. M.
Datz & Son, A. S.
Dejonge & Co., Louis
Dobeckmun Co., The
Hampden Glazed Paper & Card Co.
Hazen Paper Co.
Hinkson Paper Co.
Holliston Mills, Inc.
Holyoke Card & Paper Co.
Holyoke Coated & Printed Paper Co.
Hughes and Hoffman
Keller-Dorian Paper Co.
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
Marvellum Co., The
Matthias Paper Corp.
Middlesex Products Corp.
Nashua Gummed & Coated Paper Co.
New England Card & Paper Co., Inc.
Paper Affiliates Co., Inc.
Plastic Coating Corp., The
Pyrotex Leather Co.
Racquette River Paper Co., The
Riegel Paper Corp.
Royal Paper Corp.
Sanderson Products Inc.
Schulman Co., Louis
United Cotton Products Co.
United Mfg. Co.
Walther & Company, Inc.
Welsh Paper Co.
Whiting Co., Inc., C. R.
Whiting-Patterson Co., Inc.
Williams & Co., Inc., Chas. W.
Yorkville Paper Co., Inc.

PAPER, IMITATION PARCHMENT

Riegel Paper Corp.

PAPER, KRAFT

Bogalusa Paper Co.
Bradner Smith & Co.
Brown Co.
Champion Paper & Fibre Co., The
Chippewa Paper Products, Inc.
Crown-Willamette Paper Co.
Dennison Mfg. Co.
Equitable Paper Bag Co., Inc.
Fitchburg Paper Co.
Gaylord Container Corp.
Hollingsworth & Whitney Co.
International Paper Co.
Jaite Company, The
Mosinee Paper Mills Co.
Paterson Parchment Paper Co.
Racquette River Paper Co., The
Royal Paper Corp.
Seal, Inc. (Heat-Sealing)
Thilmany Pulp & Paper Co.
Tomahawk Kraft Paper Co.
Union Bag & Paper Corp.
Williams & Co., Inc., Chas. W.

PAPER, KRAFT-WAXED

Bradner Smith & Co.
Chippewa Paper Products, Inc.
Continental Bag & Paper Corp.
Equitable Paper Bag Co., Inc.
Hinkson Paper Co.
Kalamazoo Vegetable Parchment Co.
Matthias Paper Corp.
Menasha Products Co., The
Nashua Gummed & Coated Paper Co.
Paterson Parchment Paper Co.
Royal Paper Corp.
Traver Corp.
Union Bag & Paper Corp.

PAPER, METALLIC COATED (Plain and Embossed)

Aldine Paper Co., Inc.
Aluminum Co. of America
American Foil Corp.
Artcote Papers, Inc.
Beekman Paper & Card Co.
Bendix Paper Co.
Ben Mont Papers, Inc.
Bradner Smith & Co.
Collins Mfg. Co., A. M.
Datz & Son, A. S.
Decotone Products
Dejonge & Co., Louis
Dennison Mfg. Co.
Dobeckmun Co., The
Eureka Specialty Printing Co.
Fitchburg Paper Co.
Hampden Glazed Paper & Card Co.
Hartford City Paper Co.
Hazen Paper Co.
Hinkson Paper Co.
Holyoke Card & Paper Co.
Holyoke Coated & Printed Paper Co.
Hughes and Hoffman
Keller-Dorian Paper Co., Inc.
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
McLaurin-Jones Co.
Marvellum Co., The
Matthias Paper Corp.
Metz Paper Co.
Middlesex Products Corp.
Miller, Inc., Bert C.
Miller Paper Co.
Nashua Gummed & Coated Paper Co.
National Coated Paper Corp.
New England Card & Paper Co., Inc.
Paper Affiliates Co., Inc.
Paper City Mfg. Co., Inc.
Paterson Parchment Paper Co.
Pauli Corp., Karl
Plastic Coating Corp., The
Racquette River Paper Co., The
Ray-O-Nite Coated Paper Mills
Reynolds Metals Co., Inc.
Royal Paper Corp.
Sanderson Products Inc.
Schulman Co., Louis
Stevens-Nelson Paper Co.
Tablet & Ticket Co., The
United Mfg. Co.
Walther & Co., Inc.
Welsh Paper Co.
Whiting Co., Inc., C. R.
Whiting-Patterson Co., Inc.
Williams & Co., Inc., Chas. W.
Wyomissing Glazed Paper Co.

PAPER, PARCHMENT

Bradner Smith & Co.
Dejonge & Co., Louis
Hamersley Mfg. Co., The
Hampden Glazed Paper & Card Co.
Hartford City Paper Co.
Hazen Paper Co.
Kalamazoo Vegetable Parchment Co.
Marvellum Co., The
Paterson Parchment Paper Co.
Riegel Paper Corp.
Royal Paper Corp.
Stevens-Nelson Paper Co.
Strathmore Paper Co.
Sweetnam, Inc., Geo. H.
West Carrollton Parchment Co.

PAPER, PARCHMENT VEGETABLE

Dejonge & Co., Louis
Kalamazoo Vegetable Parchment Co.
Paterson Parchment Paper Co.
West Carrollton Parchment Co.

PAPER, PLATED

Beveridge-Marvellum Co.
Bradner Smith & Co.
Champion Paper & Fibre Co.
Collins Mfg. Co., A. M.
Datz & Son, A. S.
Dejonge & Co., Louis
Dennison Mfg. Co.
Hampden Glazed Paper & Card Co.
Hartford City Paper Co.
Hinkson Paper Co.
Holyoke Card & Paper Co.
Holyoke Coated & Printed Paper Co.
Hughes & Hoffman
Keller-Dorian Paper Co.
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
McLaurin-Jones Co.
Marvellum Co., The
Matthias Paper Corp.
Middlesex Products Corp.
Nashua Gummed & Coated Paper Co.
New England Card & Paper Co., Inc.
Paper City Mfg. Co.
Paper Affiliates Co., Inc.
Racquette River Paper Co., The
Ray-O-Nite Coated Paper Mills
Royal Paper Corp.
Sanderson Products, Inc.
Schulman, Louis
Springfield Glazed Paper Co.
United Mfg. Co.
Walther & Co., Inc.
Warren Co., S. D.
Welsh Paper Co.
Whiting Co., Inc., C. R.
Whiting-Patterson Co., Inc.
Williams & Co., Inc., Chas. W.
Wyomissing Glazed Paper Co.

PAPER, PYROXYLIN COATED

Aldine Paper Co.
Artcote Papers, Inc.
Atlas Powder Co.
Bradner Smith & Co.
Dejonge & Co., Louis
Dennison Mfg. Co.
du Pont de Nemours & Co., Inc., E. I.
Egyptian Lacquer Mfg. Co., The
Eureka Specialty Printing Co.
Hampden Glazed Paper & Card Co.
Hartford City Paper Co.
Hazen Paper Co.
Hinkson Paper Co.
Holliston Mills, Inc.
Holyoke Coated & Printed Paper Co.
Hughes & Hoffman
Keller-Dorian Paper Co., Inc.
Kupfer Bros. Paper Co.
Lowery & Schwartz Inc.
McLaurin-Jones Co.
Marvellum Co., The
Matthias Paper Corp.
Metz Paper Co.
Miller Paper Co.
National Coated Paper Corp.
Paper Affiliates Co., Inc.
Pauli Corp., Karl
Plastic Coating Corp., The
Pyrotex Leather Co.
Ray-O-Nite Coated Paper Mills
Richardson Taylor-Globe Corp., The
Royal Paper Corp.
Springfield Glazed Paper Co.
United Cotton Products Corp.
United Mfg. Co.
Welsh Paper Co.
Whiting Co., Inc., C. R.
Williams & Co., Inc., Chas. W.

PAPER, SHREDDED

See Paper, Excelsior & Shredded

PAPERS, SPECIALTY, ALL TYPES FOR CONVERTERS

Bradner Smith & Co.
Fitchburg Paper Co.
Hampden Glazed Paper & Card Co.
Hinkson Paper Co.
Holyoke Card & Paper Co.
Holyoke Coated & Printed Paper Co.
Kupfer Bros. Co.
Racquette River Paper Co., The
Rhinelander Paper Co.
Riegel Paper Corp.
Royal Paper Corp.
Union Bag & Paper Corp.
Warren Co., S. D.
Williams & Co., Inc., Chas. W.

PAPER, TRADEMARK

Aldine Paper Co., Inc.
Bradner Smith & Co.
Collins Mfg. Co., A. M.
Decotone Products
Dejonge & Co., Louis
District of Columbia Paper Mills, Inc.
Eureka Specialty Printing Co.
Fitchburg Paper Co.
Hampden Glazed Paper & Card Co.
Hartford City Paper Co.
Hazen Paper Co.
Hinkson Paper Co.
Holyoke Card & Paper Co.
Holyoke Coated & Printed Paper Co.
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
La Monte & Son, George
Marvellum Co., The
Matthias Paper Corp.
Micacrystal Products Co.
Morart Paper Co., Inc.
Morart Rotophot Co., Inc.
Nashua Gummed & Coated Paper Co.
Paper Affiliates Co., Inc.
Racquette River Paper Co., The

XUM

Royal Paper Corp.
Trade Lithograph & Printing Co., Inc. (Lithographed)
Union Bag & Paper Corp.
United Mfg. Co.
Walther & Co., Inc.
Warren Co., S. D.
Welsh Paper Co.
Westfield River Paper Co., Inc.
Whiting Co., Inc., C. R.
Williams & Co., Inc., Chas. W.
Yorkville Paper Co., Inc.

PAPER, VELOUR (Plain, Printed and Embossed)

Aldine Paper Co., Inc.
Artistic Flock Novelty Co.
Birge & Sons Co.
Bradner Smith & Co.
Cambridge Paper Box Co.
Dejonge & Co., Louis
Dennison Mfg. Co.
District of Columbia Paper Mills, Inc.
Hampden Glazed Paper & Card Co.
Holyoke Coated & Printed Paper Co.
Hughes and Hoffman
Keller-Dorian Paper Co., Inc.
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
McLaurin-Jones Co.
Matthias Paper Corp.
Micacrystal Products Co.
Mosinee Paper Mills Co.
Nashua Gummed & Coated Paper Co.
Paper Affiliates Co., Inc.
Pauli Corp., Karl
Payson Co., The
Royal Paper Corp.
Stahl Co., G. A.
Stevens-Nelson Paper Corp.
United Cotton Products Co.
United Mfg. Co.
Whiting Co., Inc., C. R.
Whiting-Patterson Co., Inc.
Williams & Co., Inc., Chas. W.
Wyomissing Glazed Paper Co.
Yorkville Paper Co., Inc.

PAPER, VELOUR, APPLIQUED

Aldine Paper Co.
Artistic Flock Novelty Co.
Cambridge Paper Box Co.
Du-Tone Ribbon, Corp.
Holyoke Coated & Printed Paper Co.
Micacrystal Products Co.
Nashua Gummed & Coated Paper Co.
Payson Co., The
Pauli Corp., Karl
Williams & Co., Inc., Chas. W.

PAPER, VELOUR, SILK

Aldine Paper Co.
Artistic Flock Novelty Co.
Bradner Smith & Co.
Cellusuede Products, Inc.
District of Columbia Paper Mills, Inc.
Hampden Glazed Paper & Card Co.
Holyoke Coated & Printed Paper Co.
Keller-Dorian Paper Co., Inc.
Kupfer Bros. Paper Co.
Matthias Paper Corp.
Nashua Gummed & Coated Paper Co. (Rayon)
Paper Affiliates, Co., Inc.
Pauli Corp., Karl
Payson Co., The
Royal Paper Corp.
Stevens-Nelson Paper Corp.
Whiting Co., Inc., C. R.
Williams & Co., Inc., Chas. W.

PAPER, WAXED

American Tissue Mills
Ben Mont Papers, Inc.
Bradner Smith & Co.
Brown Co.
Central Waxed Paper Co.
Chippewa Paper Products, Inc.
Crystal Tissue Co., The
Detroit Wax Paper Co.
Dixie Wax Paper Co., Inc.
General Waxed Papers, Inc.
Hamersley Mfg. Co., The
Henle Wax Paper Mfg. Co., The
Kalamazoo Vegetable Parchment Co.
Kuhmarker Waxed Paper Co.
Menasha Products Co., The
Nashua Gummed & Coated Paper Co.
Newark Paraffine & Parchment Paper Co.
Ohio Wax Paper Co.
Paterson Parchment Paper Co.
Rap-In-Wax Paper Co.
Racquette River Paper Co., The
Riegel Paper Corp.
Specialty Paper Co.
Sweetnam, Inc., Geo. H.
Waterproof Board & Paper Co.
Waxed Products Co., Inc.

PAPER, WOOD VENEER (Imitation)

Aldine Paper Co.
Bradner Smith & Co.
Dejonge & Co., Louis
Dennison Mfg. Co.
District of Columbia Paper Mills, Inc.
Hampden Glazed Paper & Card Co.
Hazen Paper Co.
Hinkson Paper Co.
Holyoke Card & Paper Co.
Holyoke Coated & Printed Paper Co.
Keller-Dorian Paper Co., Inc.
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
Marvellum Co., The
Matthias Paper Corp.
Middlesex Products Co.
Morart Paper Co., Inc.
Morart Rotophot Co., Inc.
Nashua Gummed & Coated Paper Co.
Paper Affiliates Co., Inc.
Racquette River Paper Co., The
Royal Paper Corp.
Stevens-Nelson Paper Corp.
United Mfg. Co.
Walther & Co., Inc.
Whiting Co., Inc., C. R.
Williams & Co., Chas. W.
Yorkville Paper Co., Inc.

PAPER, WRAPPING (Fancy Tissue)

Aldine Paper Co.
American Tissue Mills
Ben Mont Papers, Inc.
Birge & Sons Co., M. H.
Bradner Smith & Co.
Chicago Printed String Co.
Crystal Tissue Co., The
Datz & Son, A. S.
Decotone Products
Dejonge & Co., Louis
Dennison Mfg. Co.
Du-Tone Ribbon Corp.
Gaylord Container Corp.
Hampden Glazed Paper & Card Co.
Hazen Paper Co.
Hinkson Paper Co.
Holyoke Coated & Printed Paper Co.
Hughes and Hoffman
Kalamazoo Vegetable Parchment Co.
Keller-Dorian Paper Co., Inc.
Kupfer Bros. Co.
Kupfer Bros. Paper Co.
La Monte & Son, George
McLaurin-Jones Co.
Marvellum Co., The
Matthias Paper Corp.
Menasha Products Co., The
Micacrystal Products Co.
Morart Paper Co., Inc.
Morart Rotophot Co., Inc.
Nashua Gummed & Coated Paper Co.
Paterson Parchment Paper Co.
Pauli Corp., Karl
Racquette River Paper Co.
Royal Paper Corp.
Schulman Co., Louis
Stevens-Nelson Paper Corp.
Tuttle Press Co., The
Walther & Co., Inc.
Welsh Paper Co.
Westfield River Paper Co., Inc.
Whiting Co., Inc., C. R.
Whiting-Patterson Co., Inc.
Williams & Co., Inc., Chas. W.
Yorkville Paper Co., Inc.

PASTES

See Adhesives

PNEUMATIC TUBE SYSTEMS

Lamson Co., Inc., The
Standard Conveyor Co.

PRESSES, ALL-SIZE ROTARY

Chambon Corp.
Champlain Corp.
Claybourn Corp.
Colton Co., Arthur
Haida Engineering Co.
Henschel Mfg. Co., C. B.
Hudson-Sharp Machine Co.
Klingrose Machine Corp.
L. C. Machinery Co., Inc.
Marconetti, Inc., A. E.
Meisel Press Mfg. Co.
New Jersey Machine Corp.
Package Machinery Co.
Potdevin Machine Co.
Printcote Co., Inc., The
Rotogravure Engineering Corp.
Stokes Machine Co., F. J.
Stokes & Smith Co.
U. P. M. Kidder Press Co.
Woodward & Tiernan Printing Co.

PRESSES FOR EMBOSSED SEALS

Meisel Press Mfg. Co.

PRESSES, MULTI-COLOR PRINTING (Cartons, Labels, Wraps)

Chambon Corp.
Champlain Corp.
Claybourn Corp.
Haida Engineering Co.
Harris-Seybold-Potter Co., Seybold Div.
Henschel Mfg. Co., C. B.
Hudson-Sharp Machine Co.
Klingrose Machine Corp.
L. C. Machinery Co., Inc.
Marconetti, Inc., A. E.
Markem Machine Co.
Meisel Press Mfg. Co.
Milprint, Inc.
Package Machinery Co.
Potdevin Machine Co.
Printcote Co., Inc., The
Rotogravure Engineering Corp.
Rutherford Machinery Co.
Saranac Machine Co.
Specialty Automatic Machine Co.
U. P. M. Kidder Press Co.
Waldron Corp., John
Woodward & Tiernan Printing Co.

PRESSES, PRINTING (On Bottles, Glass & Plastics)

Markem Machine Co.

PRESSES, PRINTING (Transparent Cellulose)

Chambon Corp.
Champlain Corp.
Claybourn Corp.
Haida Engineering Co.
Henschel Mfg. Co., C. B.
Klingrose Machine Corp.
L. C. Machinery Co., Inc.
Markem Machine Co.
Meisel Press Mfg. Co.
Potdevin Machine Co.
Printcote Co., Inc., The
Rotogravure Engineering Corp.
U. P. M. Kidder Press Co.
Waldron Corp., John

PRESSES, ROTOGRAVURE

Chambon Corp.
Harris-Seybold-Potter Co., Seybold Div.
Henschel Mfg. Co., C. B.
Klingrose Machine Corp.
L. C. Machinery Co., Inc.
Meisel Press Mfg. Co.
Printcote Co., Inc., The
Rotogravure Engineering Corp.
U. P. M. Kidder Press Co.

PREVENTATIVES, MOISTURE, RUST, CORROSION AND MILDEW

Davison Chemical Corp., The

PRINTING (On Bottles, Glass & Plastics)

Anchor Hocking Glass Corp.
Crescent Ink & Color Co. of Pa.

PRINTING ROLLERS

Bingham Bros. Co.
Chambon Corp.
Champlain Corp.
Dornbusch Agency, Inc., The
Haida Engineering Co.
Hudson-Sharp Machine Co.
Klingrose Machine Corp.
L. C. Machinery Co., Inc.
Marconetti, Inc., A. E.
Model Machinery Corp.
Potdevin Machine Co.
Printcote Co., Inc., The
Roller Engraving Co., Inc. (Intaglio)
U. S. Rubber Products, Inc.

PUMPS

Aldrich Pump Co., The
Federal Tool Corp.
Kiefer Machine Co., The Karl
Pennsylvania Pump & Compressor Co.
Stokes Machine Co., F. J.
U. S. Bottlers Machinery Co.

PUMPS (Vacuum or Air Pressure)

New Jersey Machine Corp.
U. S. Bottlers Machinery Co.

RAISED PRINTING

Barnard Mfg. Co., Paul J.
Ben Mont Papers, Inc.
Dennison Mfg. Co.
Hanograf Corp.
Wood, Nathan & Virkus Co., Inc., (Virkotype Process)

RIBBONS, CELLULOSE

Brooks Paper Co.
Crystal Tissue Co., The
Dennison Mfg. Co.
Dobeckmun Co., The
Du-Tone Ribbon Corp.
Fibre Cord Co.
Freydberg Bros., Inc.
General Ribbon Mills
Hy-Sil Mfg. Co.
Lustro Ribbon Co., Inc.
Royal Paper Corp.
Shellmar Products Co.
Stark Bros. Ribbon Co.
Thayer Mfg. Co.
Walser Mfg. Co., Inc., The

RIBBONS AND TIES (Plain and Decorative)

Ben Mont Papers, Inc.
Chicago Printed String Co.
Crystal Tissue Co., The
Dennison Mfg. Co.
Du-Tone Ribbon Corp.
Fibre Cord Co.
Freydberg Bros., Inc.
Hy-Sil Mfg. Co.
Milwaukee Printed String Co.
National Tinsel Mfg. Co.
Royal Paper Corp.
Stark Bros. Ribbon Corp.
Stevens-Nelson Paper Corp.
Taft Co., R. C.
Thayer Mfg. Co.
Walser Mfg. Co., Inc., The
W-E-R-Ribbon Corp.
Wright & Sons Co., Wm. E.

ROLL LEAF (Stamping Foil)

Cambridge Paper Box Co.
Coughlin Manufacturing Co.
Dejonge & Co., Louis
Diamond Decorative Leaf Co.
Griffin, Campbell, Hayes, Walsh, Inc.
Hastings & Co.
Holliston Mills, Inc., The
Kemp Co., W. H.
Krause Inc., Richard M.
Markem Machine Co.
Matthias Paper Corp.
Nashua Gummed & Coated Paper Co.
Pauli Corp., Karl
Peacock Roll Leaf Co.
Peerless Roll Leaf Co., Inc.
Swift & Sons, Inc., M.

ROLL LEAF STAMPING EQUIPMENT

Griffin, Campbell, Hayes, Walsh, Inc.
Markem Machine Co.
Peerless Roll Leaf Co., Inc.
Thomson National Press Co.

ROLLS, SILVERWARE & CUTLERY

Eureka Mfg. Co., Inc.

RULES, PAPER CUTTING

Helmold & Bro. Inc., J. F.
Simonds Saw & Steel Co.

SAUSAGE CASINGS (Artificial Transparent)

Goodyear Tire & Rubber Co., Inc.
Sylvania Industrial Corp.

SCALES, AUTOMATIC CHECK WEIGHERS

Amsco Packaging Machinery, Inc.
Arenco Machine Co., Inc.
Consolidated Packaging Machinery Corp.
Exact Weight Scale Co., The
Goat Co., Inc., The Fred
Gump Co., B. F.
International Business Machines Corp.
Jacobs Bros. Co., Inc.
Johnson Automatic Sealer Co., Ltd.
Merric Scale Mfg. Co.
Pneumatic Scale Corp., Ltd.
Stokes & Smith Co.
Toledo Precision Devices, Inc.
Toledo Scale Co.
Triangle Package Machinery Co.
Weigh Right Automatic Scale Co.

SCALES, AUTOMATIC WEIGHING, FILLING

American Machine & Foundry Co.
Amsco Packaging Machinery, Inc.
Arenco Machine Co., Inc.
Automatic Scale Co.
Bostitch, Inc.
Consolidated Packaging Machinery Corp.
Exact Weight Scale Co., The
Ferguson Co., J. L.
Goat Co., Inc., The Fred
Gump Co., B. F.
Johnson Automatic Sealer Co., Ltd.
Miller Wrapping & Sealing Machine Co.
National Packaging Machinery Co.
Package Machinery Co.
Pneumatic Scale Corp., Ltd.
Richardson Scale Co.
Rose Bros. (Gainsborough), Ltd.
Stokes Machine Co., F. J.
Stokes & Smith Co.
Syntron Company
Toledo Precision Devices, Inc.
Toledo Scale Co.
Triangle Package Machinery Co.
U. S. Automatic Box Machinery Co., Inc.
Vol-U-Meter Co., Inc.
Weigh Right Automatic Scale Co.

SCALES, FREIGHT, EXPRESS

Amsco Packaging Machinery, Inc.
Exact Weight Scale Co., The
Fairbanks, Morse & Co.
Howe Scale Co.
Jacobs Bros. Co., Inc.
Kron Co., The
Toledo Scale Co.

SCALES, OVER AND UNDER WEIGHT

Exact Weight Scale Co., The
Fairbanks, Morse & Company
Jacobs Brothers Co., Inc.
Toledo Scale Co.

SEALS, EMBOSSED

Aluminum Seal Co.
Attleboro Printing & Embossing Co.
Cameo Die & Label Co.
Chaspec Mfg. Co.
Chicago Printed String Co.
Consolidated Lithographing Corp.
Dennison Mfg. Co.
Ever Ready Label Corp.
Foxon Co., The

XUM

Fuller Label & Box Co.
French-Bray Printing Co., The
Grammes & Sons, Inc., L. F.
Grand Rapids Label Co.
Heywood Co., Inc., R. R.
Horn, John
Hy-Sil Mfg. Co.
Kaumagraph Co.
Krause, Inc., Richard M.
Mason & Sons, F. E.
May Co., The J. L.
Meisel Press Mfg. Co.
Milwaukee Label & Seal Co.
Nalco, Inc.
National Color Printing Co., Inc., The
Pacific Fine Arts-Pacific Label Co.
Palm, Fechteler & Co.
Reyburn Mfg. Co., Inc., The
Reynolds Metals Co., Inc.
Rode & Brand
St. Louis Sticker Co.
Shuman Co., Frank G.
Stanley Mfg. Co.
Stecher-Traung Lithograph Corp.
Tablet & Ticket Co., The
Triangle Package Machinery Co.
Wheeler-Van Label Co.
Wurzburg Bros.
Wynekoop Co., Walker

SILICATE-OF-SODA

Arabol Mfg. Co.
Bingham Bros. Co.
du Pont de Nemours & Co., Inc., E. I.
Findley Co., The F. G.
Grasselli Chemical Co., The
Mechling Bros. Chemical Co.
Paisley Products, Inc.
Philadelphia Quartz Co.
Standard Silicate Div.

SPOOLS, FIBRE

American Can Co.
Cambridge Paper Box Co.
Cleveland Container Co.
Cross Paper Products Corp.
Gates Paper Co., Ltd.
R. C. Can Co.
Ritchie & Co., W. C.
Sefton Fibre Can Co.
Shoup-Owens Co.

SPOUTS, POURING

American Aluminum Ware Co. (Aluminum)
American Can Co.
Anchor Cap & Closure Corp.
Aridor Co., The
Consolidated Fruit Jar Co.
Continental Can Co., Inc.
Dennison Mfg. Co.
Federal Tool Corp.
Food Dispenser Co.
National Can Corp.
National Folding Box Co.
R. C. Can Company
Ritchie & Co., W. C.
Scovill Manufacturing Co.
Sefton Fibre Can Co.
Seeley Tube & Box Co.
Standard Specialty & Tube Co.
White Metal Mfg. Co.
Williams Sealing Corp.

SPOUTS, TIN CAN

American Can Co.
Anchor Cap & Closure Corp.
Art Tube Co.
Consolidated Fruit Jar Co.
Continental Can Co., Inc.
Gutmann & Co., Ferdinand
National Can Corp.
National Seal Co., Inc.
R. C. Can Co.
Standard Specialty & Tube Co.
White Metal Mfg. Co.
Wirz, Inc., A. H.

SPRAYERS, BOTTLE AND CAN, FOR LIQUIDS

American Aluminum Ware Co.
Consolidated Fruit Jar Co.
Double Duty Products, Inc.
Federal Tool Corp.
Scovill Manufacturing Co.
U. S. Bottlers Machinery Co.

SPRINKLER TOPS

Aluminum Co. of America
American Aluminum Ware Co.
Anchor Cap & Closure Corp.
Armstrong Cork Co., Closure Division
Art Tube Co.
Bridgeport Metal Goods Mfg. Co.
Chase Brass & Copper Co., Inc.
Colt's Patent Fire Arms Mfg. Co.
Consolidated Fruit Jar Co.
Dodge Cork Co., Inc.
Federal Tool Corp.
Gates Paper Co., Ltd.
Imperial Metal Mfg. Corp.
Mundet Cork Corp.
Peerless Tube Co.
R. C. Can Co.
Ritchie & Co., W. C.
Scovill Manufacturing Co.
Seeley Tube & Box Co.
Sun Tube Corp.
Thorn Tite Tops, Inc.
White Metal Mfg. Co.
Wirz, Inc., A. H.
Wurzburg Bros.

STAPLES, WIRE

Acme Staple Co.
Acme Steel Co.
Bates Mfg. Co., The
Bostitch, Inc.
Dennison Mfg. Co.
Diagraph-Bradley Stencil Machine Corp.
Heller Co., The
Hotchkiss Sales Co.
Paslode Co.
Saranac Machine Co.
Wurzburg Bros.

STOPPERS, RUBBER

Anchor Cap & Closure Corp.
U. S. Rubber Products, Inc.

STRING, PRINTED (Plain and Decorative)

Chicago Printed String Co.
Fibre Cord Co., Inc.
Freydberg Bros.
Milwaukee Printed Spring Co.
National Tinsel Mfg. Co.
Stark Bros. Ribbon Corp.

TAGS, SHIPPING

Cambridge Paper Box Co.
Campbell Box & Tag Co.
Chippewa Paper Products, Inc.
Cupples-Hesse Envelope & Litho. Co.
Dennison Mfg. Co.
Fox Co., The C. J.
Foxon Co., The
French-Bray Printing Co., The
International Tag & Sales Book Co.
May Co., The J. L.
Milwaukee Printing Co.
Reyburn Mfg. Co., Inc., The
Robinson Tag & Label Co.
Tompkins Label Service
Wurzburg Bros.

TAPE, CELLULOSE

Minnesota Mining & Mfg. Co.
Walser Mfg. Co., Inc., The

TAPE, COTTON (Plain and Printed)

Chicago Printed String Co.
Freydberg Bros., Inc.
Milwaukee Printed String Co.

TESTERS, PAPER AND BOARD

Cady & Co., E. J.
Dennison Mfg. Co.
Perkins & Son, Inc., B. F.
Thwing Instrument Co.
Toledo Scale Co.

TIN PLATE

Carnegie-Illinois Steel Corp.
Inland Steel Co.
Jones & Laughlin Steel Corp.
McKeesport Tin Plate Co.
National Can Corp.
Republic Steel Corp.
United States Steel Corp.
Wheeling Steel Corp.

TUBES, CELLULOSE

American Paper Goods Co., The
Cambridge Paper Box Co.
Central States Paper & Bag Co., Inc.
Dobeckmun Co., The
du Pont de Nemours & Co., Inc., E. I.
Emeloid Co., Inc.
Hygienic Tube & Container Corp.
Lusteroid Container Co., Inc.
Meyer Bros., Jos. H.
New England Collapsible Tube Co.
Parfait Powder Puff Co.
Ritchie & Co., W. C.
See-Thru Container Corp.
Transparent Specialties Mfg. Co.
Victor Metal Products Corp.

TUBES, COLLAPSIBLE (Aluminum, Lead, Tin and Alloys)

Aluminum Co. of America (Aluminum only)
Art Tube Co.
Atlantic Mfg. Co.
National Collapsible Tube Co.
New England Collapsible Tube Co.
Peerless Tube Co.
Standard Specialty & Tube Co.
Sun Tube Corp.
Thorn Tite Tops, Inc.
Turner White Metal Co.
Victor Metal Products Corp.
Wheeling Stamping Co.
White Metal Mfg. Co.
Wirz, Inc., A. H.
Wurzburg Bros.

TUBES, FIBRE

American Can Co.
Cambridge Paper Box Co.
Cin-Made Corp.
Cleveland Container Co.
Cross Paper Products Corp.
Gates Paper Co., Ltd.
International Mailing Tube & Wrapper Co.
Mason Box Co., The
National Paper Can Co.
R. C. Can Co.
Ritchie & Co., W. C.

Seeley Tube & Box Co.
Sefton Fibre Can Co.
Waldorf Paper Products Co.
Wurzburg Bros.

TUBING, GLASS

Kimble Glass Co.

VARNISHES AND LACQUERS (For Coating)

Atlas Powder Co., Zapon Div., and Zapon-Brevolite Div.
Ault & Wilborg Corp.
Bakelite Corp.
Carbide & Carbon Chemicals Corp.
Chemical Products Corp.
Commercial Solvents Corp.
Crescent Ink & Color Co. of Pa.
du Pont de Nemours & Co., Inc., E. I.
Durez Plastics & Chemicals, Inc.
Eastman Kodak Co.
Egyptian Lacquer Mfg. Co.
Goodyear Tire & Rubber Co., Inc., The, Pliofilm Sales Div.
Heekin Can Co., The
Hilo Varnish Corp.
Levey Co., Inc., Frederick H.
Maas & Waldstein
Maff, Inc., John
Menasha Products Co., The
Miller, Inc., Bert C.
Monsanto Chemical Co.
Murphy Varnish Co., Essex Varnish Division
National Starch Products, Inc.
North Bergen Varnish Corp.
Pope & Gray, Inc.
Pyroxylin Products, Inc.
Resinox Corp.
Roxalin Flexible Lacquer Co.
Sherwin-Williams Co., The
Stanley Chemical Co., The
Watson-Standard Co., The

VIALS, CELLULOSE

Hygienic Tube & Container Corp.
Lusteroid Container Co., Inc.
Mack Molding Co., Inc.

VIALS, GLASS

Anchor Hocking Glass Corp.
Armstrong Cork Products Co.
Kimble Glass Co. (Plain and Decorated)
Owens-Illinois Glass Co.
Pennsylvania Glass Products Co.

VIALS, METAL

Aluminum Company of America
Sun Tube Corp.
Victor Metal Products Corp.

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Kimberly-Clark Corp.
Pioneer Paper Stock Co.
Sweetnam, Inc., Geo. H.
Union Wadding Co.

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See Cartons, Folding and Display
See Displays (various headings)
See Lithographers

WIRE, COLORED STITCHING

Acme Steel Co.
Harris-Seybold-Potter Co., Seybold Div.
Heller Co., The
Saranac Machine Co.

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Acme Steel Co.
Chicago Steel & Wire Co.
Gerrard Co., Inc., The
Harris-Seybold-Potter Co., Seybold Div.
Heller Co., The
Prentiss & Co., Geo. W.
Saranac Machine Co.
Seneca Wire & Mfg. Co.
Signode Steel Strapping Co.
Stanley Works, Steel Strapping Div.
Wheeling Steel Corp.

WIRE, STAPLING

Acme Staple Co.
Acme Steel Co.
American Brass Co., The
Bostitch, Inc.
Dexter Folder Co.
Harris-Seybold-Potter Co., Seybold Div.
Heller Co., The
Ideal Stitcher & Mfg. Co.
National Metal Edge Box Co.
Prentiss & Co., Geo. W.
Saranac Machine Co.
Seneca Wire & Mfg. Co.
Wilson Steel & Wire Co.

WIRE STITCHING

Acme Staple Co.
Acme Steel Co.
American Brass Co., The
American Nickeloid Co.
Bostitch, Inc.
Chicago Steel & Wire Co.
Dexter Folder Co.
Harris-Seybold-Potter Co., Seybold Div.
Heller Co., The
Ideal Stitcher & Mfg. Co.
Ludlum Steel Co.
Morrison Co., Inc., J. L.
National Metal Edge Box Co.
Prentiss & Co., Geo. W.
Saranac Machine Co.
Seneca Wire & Mfg. Co.
Wilson Steel & Wire Co.

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Aldine Paper Co.
Keller-Dorian Paper Co., Inc.
Sheip Mfg. Co., Henry H.
Stevens-Nelson Paper Corp.

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Consolidated Paper Co.
Container Corp. of America
Eddy Paper Corp., The
Gair Co., Inc., Robert
Gaylord Container Corp.
Hinde & Dauch Paper Co., The
Kieckhefer Container Co.
Kimberly-Clark Corp.
Owens-Illinois Glass Co.
River Raisin Paper Co.
Rockford Fibre Container Co.
Sherman Paper Products Co.
Sweetnam, Inc., Geo. H.
U. S. Corrugated-Fiber Box Co., The
Waldorf Paper Products Co.

WRAPPERS, FOIL

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American Label Co.
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Daniels Mfg. Co.
Dennison Mfg. Co.
Dobeckmun Co., The
Foil Products Corp.
Foxon Co., The
French-Bray Printing Co., The
Hartford City Paper Co.
Johnson Automatic Sealer Co., Ltd.
Johnston Tin Foil & Metal Co.
Keller-Dorian Paper Co., Inc.
Krause, Inc., Richard M.
Matthias Paper Corp.
Milprint, Inc.
Reynolds Metals Co., Inc.
Standard Rolling Mills, Inc.

WRAPPERS, PRINTED GLASSINE

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Ben Mont Papers, Inc.
Central Waxed Paper Co.
Cupples Hesse Envelope & Litho. Co.
Daniels Mfg. Co.
Deerfield Glassine Co.
Dennison Mfg. Co.
Detroit Wax Paper Co.
Dobeckmun Co., The
Eureka Specialty Printing Co.
Hamersley Mfg. Co., The
Hartford City Paper Co.
Hazen Paper Co.
Henle Wax Paper Mfg. Co., Inc., The
Holyoke Coated & Printed Paper Co.
Johnson Automatic Sealer Co., Ltd.
Marvellum Co.
Matthias Paper Corp.
Menasha Products Co.
Milprint, Inc.
Nashua Gummed & Coated Paper Co.
Oneida Paper Products, Inc.
Paterson Parchment Paper Co.
Riegel Paper Corp.
Royal & Co., Thomas M.
Shellmar Products Co.
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Traver Corp.
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WRAPPERS, TRANSPARENT CELLULOSE

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Central Waxed Paper Co.
Continental Paper & Bag Corp.
Crystal Tissue Co., The
Detroit Wax Paper Co.
Hamersley Mfg. Co., The
Hartford City Paper Co.
Johnson Automatic Sealer Co., Ltd.
Kalamazoo Vegetable Parchment Co.
Marathon Paper Mills
Menasha Products Co., The
Milprint, Inc.
Nashua Gummed & Coated Paper Co.
Newark Paraffine & Parchment Paper Co.
Paterson Parchment Paper Co.
Riegel Paper Corp.
Royal Paper Corp.
Royal & Co., Thomas M. (Waxed Paper)
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Traver Corp.
West Carrollton Parchment Co.
Westfield River Paper Co., Inc.
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Alderman Paper Box Corp., 31 Exchange, Rochester, N. Y.
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Aldrich Pump Co., The, 1 Pine St., Allentown, Pa.
Allcolor Co. Inc., 527 5th Ave., New York, N. Y.
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American Finishing Co., 500 S. Peoria, Chicago, Ill.
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American Hard Rubber Co., 11 Mercer St., New York, N. Y.
American Insulator Corp., 1930 Main St., New Freedom, Pa.
American Label Co., 216 W. 18th St., New York, N. Y.
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American Products Mfg. Co., 8131 Oleander, New Orleans, La.
American Seal-Kap Corp., 1105—44th Drive, Long Island City, N. Y.
American Star Cork Co. Inc., 175-177 No. 9th St., Brooklyn, N. Y.
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Artcote Papers Inc., 380 Coit St., Irvington, N. J.
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Art Tube Co., 500 Lyons Ave., Irvington, N. J.
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Automatic Packaging Corp., Devon, Pa.
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Bartlett Label Co., Kalamazoo, Mich.
Bates Mfg. Co., 30 Vesey St., New York, N. Y.
Bates Valve Bag Corp., 230 Park Ave., New York, N. Y.
Battle Creek Bread Wrapping Machine Co., Battle Creek, Mich.
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Bemis Bros. Bag Co., 601 S. Fourth St., St. Louis, Mo.
Bendix Paper Co., 480 Canal St., New York, N. Y.
Bennett Pottery Co., Edwin, 600 South Eden St., Baltimore, Md.
Ben Mont Papers, Inc., Bennington, Vt.
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Bloomer Bros. Co., Wayne County, Newark, N. Y.
Blum, Emery, 251—5th Avenue, New York, N. Y.
Blum Folding Paper Box Co. Inc., 79-87 Bogart St., Brooklyn, N. Y.
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Bond Mfg. Corp., Inc., 16th & Locust Sts., Wilmington, Del.
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Bridgeport Metal Goods Mfg. Co., 365 Cherry, Bridgeport, Conn.
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Brockway Glass Co. Inc., 1047—7th Ave., Brockway, Pa.
Brooks Bank Note Co., 140 Wilbraham Ave., Springfield, Mass.
Brooks Paper Co., 400 Security Bldg., St. Louis, Mo.
Brooks & Porter Inc., 304 Hudson St., New York, N. Y.
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Calvert Lithographing Co., 2100 W. Gd. River, Detroit, Mich.
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Canada's Pride Products Co. Inc., 60 Hudson St., New York, N. Y.
Canister Co., The, Phillipsburg, N. J.
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Capex Company, The, 6433 Ravenswood Ave., Chicago, Ill.
Capitol Printing Ink Co. Inc., Washington, D. C.
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., New York, N. Y.
Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh, Pa.
Carpenter Container Co. Inc., 147—41st St., Brooklyn, N. Y.
Carpenter Steel Co., 125 W. Bern St., Reading, Pa.
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Cincinnati Molding Co., 2037 Florence St., Cincinnati, O.
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Sherwin-Williams Co., The, 101 Prospect Ave., N.W., Cleveland, O.
Shoup-Owens Inc., 1100 Adams St., Hoboken, N. J.—81
Shuman Co., Frank G., 771 W. Jackson Blvd., Chicago, Ill.
Shuttleworth Carton Co. Inc., 474 W. Broadway New York, N. Y.
Siemon Co., Cor. Dewey & State Sts., Bridgeport, Conn.
Signode Steel Strapping Co., 2600 N. Western Ave., Chicago, Ill.
Sillcocks-Miller Co., W. Parker Ave., Maplewood, South Orange, N. J.
Simco Corp., York Rd. & Albanus, Philadelphia, Pa.
Simonds Saw & Steel Co., Fitchburg, Mass.
Simplex Paper Box Corp., Lancaster, Pa.—71
Simplex Wrapping Machine Co., 942—23rd Ave., Oakland, Calif.
Sinclair & Carroll Co. Inc., 591—11th Ave., New York, N. Y.
Sinclair & Valentine Co., 611 W. 129th nr. Broadway, New York, N. Y.
Sinel, Joseph, 104 E. 40th St., New York, N. Y.
Sisalkraft Co., 205 W. Wacker Drive, Chicago, Ill.
Smith Co., The S. K., 2857 N. Western Ave., Chicago, Ill.—64–65
Smith & Winchester Mfg. Co., South Windham, Conn.
Smithe Machine Co. Inc., F. L., 633 W. 44th St., New York, N. Y.
Snyder & Black Inc., 200 William St., New York, N. Y.
Southern Container Co., 6037 Esperson St., Houston, Texas
Spear Box Co. Inc., 270—11th Ave., New York N. Y.
Special Production Machines Inc., Div. Pneumatic Scale Corp. Ltd., Norfolk Down Sta., Quincy, Mass.—341, 357
Specialty Automatic Machine Co., 200 Boston Ave., Medford, Mass.
Specialty Insulation Co., 55 Center Ave., Hoosick Falls, N. Y.
Specialty Papers Co., 916 Miami Chapel Rd., Dayton, O.
Speedway Mfg. Co., 1834 So. 52nd Ave., Cicero, Ill.
Spitzer Paper Box Co., 3051 Monroe, Toledo, O.
Springfield Glazed Paper Co., Springfield, Mass.
Stahl, G. A., 1401 Fkd. Ave., Philadelphia, Pa.
Standard Cap & Molding Co., 307 S. Eaton St., Baltimore, Md.
Standard Conveyor Co. Inc., Station B, North St. Paul, Minn.
Standard Finishing Co. Inc., 203 E. 12th St., New York, N. Y.
Standard-Knapp Corp., 43–27 Thirty-Second Place, Long Island City, N. Y.—339
Standard Paper Co., Bellows Falls, Vt.
Standard Printing Co., Louisville, Ky.
Standard Rolling Mills Inc., 143 Jewel, Brooklyn, N. Y.
Standard Silicate Div., 4701 Paddock, Cincinnati, O.
Standard Specialty & Tube Co., Lower Penn Ave., New Brighton, Pa.
Standard Textile Products Co., 527—5th Ave., New York, N. Y.
Stanley Chemical Co., The, 1938 Banninga Ave., East Berlin, Conn.
Stanley Mfg. Co., 800 E. Monument Ave., Dayton, O.
Stanley Works, The, 195 Lake St., New Britain, Conn.
Stanwood Paper Tube & Can Corp., ft. 38th, North Bergen, N. J.
Star Case Co., 76 Madison Ave., New York, N. Y.
Stark Bros. Ribbon Corp., 352—4th Ave., New York, N. Y.—125
Staude Mfg. Co., E. G., 2675 University Ave., St. Paul, Minn.
Stecher-Traung Lithograph Corp., 274 North Goodman St., Rochester, N. Y.—Insert 242–243
Steffens, Jones & Co., 257 W. 17th St., New York, N. Y.
Stein Hall Mfg. Co., 2841 S. Ashland Ave., Chicago, Ill.
Stensgaard & Associates Inc., W. L., 346 N. Justine, Chicago, Ill.
Sterling Electric Motors Inc., 5401 Telegraph Road, Los Angeles, Calif.
Stevens-Nelson Paper Corp. (Formerly Japan Paper Co.), 109 E. 31st St., New York, N. Y.—133
Stokes Machine Co., F. J., 5990 Tabor Road, Philadelphia, Pa.
Stokes Rubber Co., Jos., 322 Webster St., Trenton, N. J.
Stokes & Smith Co., Frankford, Philadelphia, Pa.—350–351
Stone Bros. Inc., 800 S. Ada St., Chicago, Ill.

XUM

MANUFACTURERS AND ADDRESSES

For further information, refer to advertising pages or write advertisers direct

Stone & Forsyth Co., 67 Kingston, Boston, Mass.
Strathmore Paper Co., West Springfield Mills, West Springfield, Mass.
Strobridge Lithographing Co., Norwood Station, Cincinnati, O.
Strong, Cobb & Co. Inc., Lisbon Rd. & Evins Ave., Cleveland, O.
Stubbs Corp., 4043 Beaufait, Detroit, Mich.
Sun Chemical & Color Co., Div., General Printing Ink Co., 100—6th Ave., New York, N. Y.
Sun Tube Corp., Hillside, N. J.—181
Superior Folding Box Co., 4170 Geraldine Ave., St. Louis, Mo.
Superior Label Finishing Co. Inc., 350 Hudson St., New York, N. Y.
Sutherland Paper Co., Rutledge & Robert Sts., Kalamazoo, Mich.
Sweetnam Inc., George H., 282–288 Portland St., Cambridge, Mass.—461
Swift & Sons Inc., M., 10 Love Lane, Hartford, Conn.
Swindell Brothers Inc., Bayard & Russell, Baltimore, Md.
Switzer, George, 336 C. Park West, New York, N. Y.
Sylvania Industrial Corp., 122 E. 42nd St., New York, N. Y.—Insert 110–111
Synthetic Moulded Products Inc., Stonington, Conn.
Synthetic Plastics Corp., 1107 Broadway, New York, N. Y.
Syntron Company, 1938 Black St., Homer City. Pa.

T

Tablet & Ticket Co., The, 1021 W. Adams St., Chicago, Ill.—253
Taft Co., R. C., 427 W. Randolph St., Chicago, Ill.
Taggart Bros. Co., Inc., 20 Park Ave., New York, N. Y.
Tamm & Co., 66 Duane St., New York, N. Y.
Tanglefoot Co., The, Grand Rapids, Mich.
Tarentum Paper Mills, Tarentum, Pa.
Taylor Box Co., 73 Eagle St., Providence, R. I.
Teague, Walter D., 210 Madison Ave., New York, N. Y.
Tech-Art Plastics Co., 40–01 36th Ave., Long Island City, N. Y.
Tennant Sons & Co., C., 9 Rockefeller Plaza, New York, N. Y.
Tennessee Eastman Corp., Kingsport, Tenn.
Tension Envelope Corp., 345 Hudson St., New York, N. Y.
Terkelsen Machine Co., 326 A Street, Boston, Mass.
Texas Paper Box Mfg. Co., 3720 La France St., Dallas, Texas
Textileather Corp., Stickney Ave. & Dayton St., Toledo, O.
Thatcher Mfg. Co., Elmira, N. Y.
Thayer Manufacturing Co., Norwich, Conn.
Thelander, Clement, Rockford, Ill.
Thermo Plastics Inc., St. Clair, Mich.
Thilmany Pulp & Paper Co., Kaukauna, Wis.
Thomson National Press Co. Inc., Franklin, Mass.
Thorn Tite Tops Inc., 202 E. 44th St., New York, N. Y.
Three Rivers Glass Co., Three Rivers, Texas
Thwing Instrument Co., 3335 Lancaster Ave., Philadelphia, Pa.
Toledo Precision Devices Inc., 3216 Monroe, Toledo, O.
Toledo Scale Co., Toledo, O.—379
Tomahaw Kraft Paper Co., 111 W. Washington, Chicago, Ill.
Tompkins' Label Service, Frankford Ave. at Allegheny Ave., Philadelphia, Pa.
Tower Envelope Co., 487 Broadway, New York, N. Y.
Trade Lithograph & Printing Co. Inc., 734 Broadway, New York, N. Y.
Transolene Co., Barrington, Ill.
Transparent Specialties Mfg. Co., 6210 Euclid Ave., Cleveland, O.
Transparent-Wrap Machine Corp., 313 Hudson St., New York, N. Y.
Trautmann, Bailey & Blampey, 13 Laight St., New York, N. Y.
Traver Corp., 358 W. Ont., Chicago, Ill.
Trenton Folding Box Co., Trenton, N. J.
Triangle Ink & Color Co. Inc., 26 Front St., Brooklyn, N. Y.
Trinity Paper Box Co., Dallas, Texas
Triangle Package Machinery Co., 908 No. Spaulding Ave., Chicago, Ill.—389
Trum Inc., E. J., 505 Court St., Brooklyn, N. Y.
Truslow & Fulle Inc., 48 Wilson St., Brooklyn, N. Y.
Turner White Metal Co., 220 Raritan Ave., New Brunswick, N. J.
Tuttle Press Co., The, Appleton, Wis.
Tycer Pottery Co., W. I., 342 E. State St., Columbus, O.
Tyer Rubber Co., Andover, Mass.
Tygart Valley Glass Co., Washington, Pa.

U

Ullman, Martin, 25 W. 37th St., New York, N. Y.
Ullman Co., Sigmund, Div. of Gen. Prtg. Ink Corp., Park Ave. & 146th St., New York, N. Y.
Union Bag & Paper Corp., Woolworth Bldg., New York, N. Y.—169
Union Gummed Products Co. Inc., 253—36th, Brooklyn, N. Y.
Union Insulating Co., Parkersburg, W. Va.
Union Paste Co., 200 Boston Ave., Medford, Mass.—411
Union Steel Products Co., 801 Pine St., Albion, Mich.—319
Union Wadding Co., 60 Dexter St., Pawtucket, R. I.
Unique Printed Products Co. Inc., 2222 N. 12th St., Terre Haute, Ind.
United Cotton Products Co., Pocasset St., Fall River, Mass.
United Mfg. Co., 168 Birnie Ave., Springfield, Mass.
United Paperboard Co., Inc., 171 Madison Ave., New York, N. Y.
U. S. Automatic Box Machinery Co. Inc., 18 Arboretum Rd., Roslindale, Boston, Mass.—380–381
U. S. Bottlers Machinery Co., 4032 N. Rockwell St., Chicago, Ill.—377
U. S. Corrugated-Fiber Box Co., The, Indianapolis, Ind.
U. S. Envelope Co., Springfield, Mass.—157
U. S. Finishing & Mfg. Co., 769 W. Jackson, Chicago, Ill.
U. S. Lace Paper Works, 417 Union Ave., Brooklyn, N. Y.
U. S. Prtg. & Litho. Co., The, 328 Beech St., Norwood, Cincinnati, O.—Inserts, 244–245, 306–307
U. S. Prtg. & Litho. Co., The, American Lithographic Div., 85 N. 3rd St., B'klyn, N. Y.—Inserts 244–245, 306–307
U. S. Rubber Products Inc., 1790 Broadway, New York, N. Y.
U. S. Steel Corp. of Delaware, 436—7th Ave., Pittsburgh, Pa.
U. S. Stoneware Co., Monmouth, Ill.
United Steel & Wire Co. Inc., Battle Creek, Mich.
Universal Container Co., 315 Hollenbeck, Rochester, N. Y.
Universal Glass Products Co., Parkersburg, W. Va.
Universal Folding Box Co. Inc., Monroe & 13th Sts., Hoboken, N. J.
Universal Jewelry Case Co., Chicopee, Mass.
Universal Label Products Co., 158 W. 27th St., New York, N. Y.
Universal Molding Co., 16th & Vermont, San Francisco, Calif.
Universal Plastics Corp., P. O. Box 346, New Brunswick, N. J.
U. P. M. Kidder Press Co., Dover, N. H.

V

Valley Molding Co., Boonton, N. J.
Valve Bag Co., 230 Park Ave., New York, N. Y.
Van Doren & Associates, Harold, 1217 Madison Ave., Toledo, O.
Van Norman Molding Co., 6437 S. State St., Chicago, Ill.
Veeder Root Inc., 20 Sargeant, Hartford, Conn.
Victor Metal Products Corp., 196 Diamond St., Brooklyn, N. Y.—195
Victory Molding Co., 1477 St., Leominster, Mass.
Vis-O-Tube Co., 218 S. Wabash Ave., Chicago, Ill.
Voges Mfg. Co., 99th St. nr. 103 Ave., Ozone Park, L. I., N. Y.
Vol-U-Meter Co., 75 Wilbury Place, Buffalo, N. Y.
Voss Corporation, Karl, 1100 Adams St., Hoboken, N. J.—95

W

Wabash Coating Mills, Wabash, Ind.
Wabash Fibre Box Co., Terre Haute, Ind.
Waddill Printing & Litho. Co., Danville, Va.
Wagner Litho. Machinery Co., Charles, 51 Park Ave., Hoboken, N. J.
Waldorf Paper Products Co., 2236 Myrtle Ave., St. Paul. Minn.
Waldron Corp., John, New Brunswick, N. J.—429
Walker Lithograph Co., 388 Newbury, Boston, Mass.
Walley Co., C. P., 11 Frankfort, New York, N. Y.
Walser Mfg. Co. Inc., The, Chester St., Clifton, N. J.
Walther & Co., 104 Kane, Brooklyn, N. Y.
Ward Plastic & Rubber Corp., 1037 Hilton Ave., Ferndale Sta., Detroit, Mich.
Warner Bros. Co., The, Box Div., Bridgeport, Conn.—44–45
Warren Company, S. D., 89 Broad St., Boston, Mass.—136
Washburn Co., The, Worcester, Mass.
Waterbury Button Co., The, Washington Ave., Waterbury, Conn.—281
Waterbury Paper Box Co., The, 155 South Leonard St., Waterbury, Conn.—67
Waterproof Paper & Board Co., The, 427 E. 6th St., Cincinnati, O.
Watertown Mfg. Co., The, 100 Echo Lake Rd., Watertown, Conn.
Watson-Standard Co., The, 225 Galveston Ave., Pittsburgh, Pa.
Waxed Products Co. Inc., 157—41st St., Brooklyn, N. Y.
Weaver Mfg. Co., Mount Holly, N. J.
Weber & Co., David, 3500 Richmond, Philadelphia, Pa.
Weber & Co. Inc., H. G., Kiel, Wis.
Weber Company, F., 1220 Buttonwood Street, Philadelphia, Pa.
Weeks, Wentworth, 60 W. 48th St., New York, N. Y.
Weigh Right Automatic Scale Co., 404 Grant Ave., Joliet, Ill.
Weil Sons Litho. Co., David, 315 Berry, Brooklyn, N. Y.
Welden, Archibald W., 101 Park Ave., New York, N. Y.
Weller Company, S. A., Zanesville, O.
Welsh Paper Company, 505 Chestnut St., Philadelphia, Pa.
W-E-R Ribbon Corp., 440—4th Ave., New York, N. Y.
West Carrollton Parchment Co., West Carrollton, O.
Western Label Co., 1129 Wall, Los Angeles, Calif.
Western Pottery Co., Box 894, Denver, Colo.
Western Stoneware Co., Monmouth, Ill.
Westfield River Paper Co. Inc., Russell, Mass.—121
Wheaton Co., T. C., Millville, N. J.
Wheeler, Leonard A., 719 So. Flower, Los Angeles, Calif.
Wheeler-Van Label Co., 21 McConnell St. S.W., Grand Rapids, Mich.
Wheeling Corrugating Co., Steel Container Div., Wheeling, W. Va.
Wheeling Stamping Co., 2100 Water St., Wheeling, W. Va.
Wheeling Steel Corp., Wheeling, W. Va.
Whitall-Tatum Dept. of Armstrong Cork Co., Glass & Closure Div., Lancaster, Pa.—227–230
White Cap Company, 1812 No. Central Ave., Chicago, Ill.
White Metal Mfg. Co., 1012 Grand St., Hoboken, N. J.
Whiting Co. Inc., C. R., 620–650 Main St., Hackensack, N. J.
Whiting Patterson Co. Inc., 99 Chauncy, Philadelphia, Pa.
Whitney & Co. Inc., 142 Water St., Leominster, Mass.
Wiener Bros. Inc., 694 Broadway, New York, N. Y.
Wilder Mfg. Co., 97 Crawford St., Leominster, Mass.
Wilkins Paper Box Co. Inc., 65 Beverly St., Boston, Mass.
Williams & Co. Inc., Chas. W., 303 Lafayette St., New York, N. Y. Insert 102–103
Williams Sealing Corp., 1226 E. Garfield Ave., Decatur, Ill.—233
Williamson Adhesives, Inc., 2327 W. 18 St., Chicago Ill.—413
Wilmanns Bros. Co., 1255 N. 6th, Milwaukee, Wis.
Wilson & Bennett Mfg. Co., The, 6532 S. Menard Ave., Chicago, Ill.
Wilson Steel & Wire Co., W. 49th & S. Western, Chicago, Ill.
Windman Bros., 3325 Union Pacific Ave., Los Angeles, Calif.
Wirz Inc., A. H., Chester, Pa.—189
Wolf Brothers, 340 N. 12th St., Philadelphia, Pa.
Wolverine Carton Co., P. O. Box 65, Grand Rapids, Mich.
Wood Electric Co. Inc., C. D., 826 Broadway, New York, N. Y.
Wood, Nathan & Virkus Co. Inc., 112 Charlton St., New York, N. Y.
Woodward & Tiernan Printing Co., 1440 Broadway, New York, N. Y.
Wortendyke Mfg. Co., P. O. Box 1598, Richmond, Va.
Wrap-Ade Machine Co. Inc., 215 Central Ave., Newark, N. J.
Wright's Automatic Packaging Machine Co., 111 N. Mangum St., Durham, N. C.
Wright & Sons Co., Wm. E., South St., West Warren, Mass.
Wurzburg Bros., 710–724 South 4th St., Memphis, Tenn.
Wynekoop Co., Walker, 300 W. Hubbard, Chicago, Ill.
Wyomissing Glazed Paper Co., 17 South Second Ave., West Reading, Reading, Pa.—Insert 136–137

Y

Yorkville Paper Co. Inc., 431–35 East 77th St., New York, N. Y.
Young Brothers Inc., 722 Eddy St., Providence, R. I.
Young Inc., Douglas, 110 Kenyon Ave., Pawtucket, R. I.
Youse Co., C. J., Holliday & Saratoga, Baltimore, Md.
Yundt Co., Michael, Waukesha, Wis.

Z

Zellerbach Paper Co., Sacramento, Calif.
Zipprodt, Inc., 6 N. Michigan Ave., Chicago, Ill.

TRADE NAME DIRECTORY

A NEW SECTION OF PACKAGING CATALOG

Listing alphabetically all known trade names of products used in the Packaging Industries

TRADE NAME	NATURE OR TYPE OF PRODUCT	COMPANY & ADDRESS
Accent	Manicure sets	The Henkel Co., Fremont, O.
Ace-Tre	One-piece capsule metal tray	Ace Carton Corp., Cicero, Ill.
A.C.M.	Box board, folding and display containers	American Coating Mills, Inc., Elkhart, Ind.
Acme	Machines	Acme Staple Co., Camden, N. J.
Air-Flo	Bottle cleaning and filling machine	Karl Kiefer Machine Co., Cincinnati, O.
Air Line	Jar cleaning machine	Karl Kiefer Machine Co., Cincinnati, O.
Air-O-Seal	Cellophane covered coffee bag	Thomas M. Royal & Co., Philadelphia, Penna.
Ajax Glaze	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Allison	Bag closing machine	B. F. Gump Co., Chicago, Ill.
Allure	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
All-Weather	Water resistant kraft	Bagpak, Inc., New York, N. Y.
American Beauty	Box cover paper	C. R. Whiting Co., Inc., Hackensack, N. J.
Amerseal	Lug caps	Anchor Cap & Closure Corp., L. I. C., N. Y.
Amerseal	Special pouring spout with screw cap closure	Continental Can Co., New York, N. Y.
Amkleer	Cellophane bags	American Paper Goods Co., Kensington, Conn.
	Cellophane envelopes	
Amsco	Bag sealer	Amsco Packaging Machinery Co., L. I. C., N. Y.
Anchor	Metal and molded closures, sealing machines and processing equipment	Anchor Cap & Closure Corp., L. I. C., N. Y.
Androck	Wire display fixtures, floor and counter types	Washburn Co., Rockford, Ill.
Arabol	Adhesive	Arabol Mfg. Co., New York, N. Y.
Araflex	Adhesive	Arabol Mfg. Co., New York, N. Y.
Aratex	Adhesive	Arabol Mfg. Co., New York, N. Y.
Argent Silver Print	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Argette	Box paper	Kupfer Bros. Co., New York, N. Y.
Aristo	Confectionery bags	American Paper Goods Co., Kensington, Conn.
Artboxtone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Artcote	Pyroxylin metallic coated papers	Artcote Papers, Inc., Irvington, N. J.
Artex	Leather substitute paper	Bradner Smith & Co., Chicago, Ill.
Art Finished Pastels	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Art Floral	Brightwood kid finish papers	Holyoke Card & Paper Co., Springfield, Mass.
Art Gingham	Brightwood kid finish papers	Holyoke Card & Paper Co., Springfield, Mass.
Artmold	Molded plastic caps	Armstrong Cork Co., Lancaster, Penna.
Art Pastels	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Ashmaster	Ash tray	Owens-Illinois Glass Co., Toledo, O.
Autoclench	Stapler	Bostitch, Inc., East Greenwich, R. I.
Baby Bunting	Nursery sets	Owens-Illinois Glass Co., Toledo, O.
Babytone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Bagpak	Multi-wall paper bag filling and closing equipment	Consolidated Packaging Machinery Corp., Buffalo, N. Y.
Bagpakers	Bag filling machinery	Bagpak, Inc., New York, N. Y.
Bakelite	Acetate, phenolic, polystyrene, urea, molding materials, also cast resins	Bakelite Corp., New York, N. Y.
Ballyhoo	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Bar-Nun	Weighing machines	B. F. Gump Co., Chicago, Ill.
Barque	Print box paper	The Marvellum Co., Holyoke, Mass.
Barroll Nozzle	Special nozzle with screw closure	Continental Can Co., New York, N. Y.
"B" Brand	Tin cans and closing machines	National Can Corp., New York, N. Y.
Beacon	Inturned lug caps	Anchor Cap & Closure Corp., L. I. C., N. Y.
Beauty Kit	Travel kit	Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.
Bedford Cord	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Beetle	Urea-formaldehyde plastic	Beetle Prods. Div. of American Cyanamid Co., New York, N. Y.
Bendall	Attachment for steel rule bender	J. F. Helmold & Bro., Inc., Chicago, Ill.
Ben Mont	Gift wrappings, tissues, glassine bags, shredded waxed papers	Ben Mont Papers, Inc., Bennington, Vt.
Ben Mont Mastercraft	Gift wrappings, tissues, glassine bags, shredded waxed papers	Ben Mont Papers, Inc., Bennington, Vt.
Bergmann	Conveyor switches	Horix Mfg. Co., Pittsburgh (4), Penna.
	Ice cream fillers	
Big Chief	Glass bottles	Owens-Illinois Glass Co., Toledo, O.
Birchette	Box paper	Kupfer Bros. Co., New York, N. Y.
Blackbird Embossed	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Blanchette	Box paper	Kupfer Bros. Co., New York, N. Y.
Bliss	Wire stitchers	Dexter Folder Co., New York, N. Y.
Bliss	Solid fibreshipping containers	Robert Gair Co., Inc., New York, N. Y.
Blossomtime	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Bond	Gross weighing and filling machines	U. S. Automatic Box Machinery Co., Inc., Roslindale, Boston, Mass.
Bo-Seals	Pre-tied, Cellulose Bows	Stark Bros. Ribbon Corp., New York, N. Y.
Bostitch	Stapling and stitching machines	Bostitch, Inc., East Greenwich, R. I.
Bostitch	Wire stitchers	Dexter Folder Co., Pearl River, N. Y.
Boston	Wire stitchers	Dexter Folder Co., Pearl River, N. Y.
Boxcrafters	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Brazilian	Box paper	Bradner Smith & Co., Chicago, Ill.
Brightwood	Box covering paper	Holyoke Card & Paper Co., Springfield, Mass.
Brightwood	Paper box making machine	U. S. Automatic Box Machinery Co., Inc., Roslindale, Boston, Mass.
Brightwood Cameo	Box cover paper	Holyoke Card & Paper Co., Springfield, Mass.
Brightwood Polychrome	Box covering paper	Holyoke Card & Paper Co. Springfield, Mass.
Brightwood Sateens	Box covering paper	Holyoke Card & Paper Co. Springfield, Mass.
Brilliant Metallics	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Britecote	Paper stock	Brooks Bank Note Co., Springfield, Mass.
Broadside	Folding carton	Robert Gair Co., Inc., New York, N. Y.
Brooks Twin	Double unit display container	Brooks Bank Note Co., Springfield, Mass.
Buckskin	Kraft lined boxes	Morris Paper Mills, Chicago, Ill.
Bunn	Tying machines	B. H. Bunn Co., Chicago, Ill.
Burt	Labeling and case packing machines	Burt Machine Co., Baltimore, Md.
Camachine	Slitting, winding and laminating machines	Cameron Machine Co., Brooklyn, N. Y.
Cameoflex	Iridescent label printing process	Cameo Die & Label Co., New York, N. Y.
Cameron	Can making machinery	Cameron Can Machinery Co., Chicago, Ill.
Canno	Belt conveyor	Karl Kiefer Machine Co., Cincinnati, O.
Canvas	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
CaPeM	Capping machines	Consolidated Packaging Machinery Corp., Buffalo, N. Y.
Carnival	Embossed foil box papers	Hazen Paper Co., Holyoke, Mass.
Caseal	Closure	Owens-Illinois Glass Co., Toledo, O.
Catalin	Cast phenolic plastic	Catalin Corp., New York, N. Y.
CCS	Crown corks	Crown Cork & Seal Co., Baltimore, Md.
Cedar	Woodgrain box papers	Hazen Paper Co., Holyoke, Mass.
Cello-Safe	Cellophane lollypop sticks	Fibre Cord Co., New York, N. Y.
Cell-U-Print	Varnished bags	Thomas M. Royal & Co., Philadelphia, Penna.
Cellusuede	Flock paper	Stevens-Nelson Paper Corp., New York, N. Y.
Cel-O-Seal	Cellulose caps and bands	Armstrong Cork Co., Lancaster, Penna.
		E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Celowax	Waxed sulphite	Riegel Paper Corp., New York, N. Y.
Cel-Spar	Box covering papers	Paper City Mfg. Co., Inc., Holyoke, Mass.
Century	Carton gluer	E. G. Staude Mfg. Co., St. Paul, Minn.

XUM

TRADE NAME	NATURE OR TYPE OF PRODUCT	COMPANY & ADDRESS
Challenger	Cellulose window gluing machine	E. G. Staude Mfg. Co., St. Paul, Minn.
Challis Print	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Chambon	Automatic printing machinery	Chambon Corp., Garfield, N. J.
Champlain	Automatic printing machinery Printing cylinders Engravings	Chambon Corp., Garfield, N. J.
Chastik	Adhesive backing	Chaspec Mfg. Co., Inc., New York, N. Y.
Chatoye	Pyroxylin treated box papers	Plastic Coating Corp., Holyoke, Mass.
Cheerio	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Cheviot	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Chevron Print	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Cinati	Liquid bottling machine	Karl Kiefer Machine Co., Cincinnati, O.
Cinati Junior	Liquid bottling machine	Karl Kiefer Machine Co., Cincinnati, O.
Circle "A"	Molded and metal caps and corks and glass containers	Armstrong Cork Co., Lancaster, Penna.
Citrustrap	Steel strapping	Acme Steel Co., Chicago, Ill.
Clearseal	Heat sealing glassine	Hartford City Paper Co., Hartford City, Ind.
Clearsite	Cellulose, vials, containers and specialties	Hygienic Tube & Container Corp., Newark, N. J.
Cleveco	Lined fibre can	Cleveland Container Co., New York, N. Y.
Climax	Bottle wrappers	Hinde & Dauch Paper Co., Sandusky, O.
Colorama	Pyroxylin box papers	Hazen Paper Co., Holyoke, Mass.
Colorettes	Cellophane flower pot wrappers	The Dobeckmun Co., Cleveland, O.
Colorgraphic	Transparent signs and calendars	The U. S. Printing & Litho. Co., Cincinnati, O.
Color-Pak	Colored shipping containers and floor displays	The U. S. Corrugated-Fiber Box Co., Indianapolis, Ind.
Colorstitch	Colored stapling and stitching wire	Acme Steel Co., Chicago, Ill.
Colt Air	Insulated containers	Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.
Coltjems	Semi-precious stones (plastics)	Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.
Coltrock	Phenol formaldehyde molding compound	Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.
Comet	Sealing tapes Box stays	McLaurin-Jones Co., Brookfield, Mass.
Comet	Out-folding carton gluer	E. G. Staude Mfg. Co., St. Paul, Minn.
Common Sense	Jars and bottles	Owens-Illinois Glass Co., Toledo, O.
Complete Satintone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Complimentary Print	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Concora	Linerboard and boxboard Boxes and shipping cartons	Container Corp. of America, Chicago, Ill.
Congo	Casein metallic box papers	Hazen Paper Co., Holyoke, Mass.
Conservettes	Cellophane corsage containers	The Dobeckmun Co., Cleveland, O.
Consolidated	Powder fillers	Consolidated Packaging Machinery Corp., Buffalo, N. Y.
Container Slotter	Corrugated container slotter and creaser	E. G. Staude Mfg. Co., St. Paul, Minn.
Cord-Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Cordurette	Imitation cloth paper	C. R. Whiting Co., Inc., Hackensack, N. J.
Corkrusta	Imitation cork paper	C. R. Whiting Co., Inc., Hackensack, N. J.
Cottonluxe	Anti-tarnish cotton-lined paper and flannel bags, envelopes and containers	Cottonluxe Mfg. Co., New York, N. Y.
Cradle	Nursing bottles	Owens-Illinois Glass Co., Toledo, O.
Cresco	Printing inks	Crescent Ink & Color Co. of Pa., Philadelphia, Penna.
Crest-Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Cretan-Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Cretonne	Printed box paper	The Marvellum Co., Holyoke, Mass.
Crinkle-Tie	Cotton tying materials	Chicago Printed String Co., Chicago, Ill.
Cripseal	Closure	Owens-Illinois Glass Co., Toledo, O.
Cross-Stitch	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Crown	Closures, caps, cans	Crown Cork & Seal Co., Baltimore, Md.
Cry-O-Vac	Protective wrap for frozen foodstuffs	Dewey & Almy Chemical Co., Cambridge B, Mass.
Cryptic	Printing inks	Crescent Ink & Color Co. of Pa., Philadelphia, Penna.
Crystal	Coated box coverings	McLaurin-Jones Co., Brookfield, Mass.
Crystallon	Mother-of-pearl box paper and cardboard	Riegel Paper Corp., New York, N. Y.
Crystal-Pak	Rigid cellulose containers	Transparent Specialties Mfg. Co., Cleveland, O.
Cumberland	Box covering and printing papers	S. D. Warren Co., Boston, Mass.
Cuplette	Box paper	Kupfer Bros. Co., New York, N. Y.
Cushion-Stitch	Siftproof and moisture-proof bag closure	Bagpak, Inc., New York, N. Y.

TRADE NAME	NATURE OR TYPE OF PRODUCT	COMPANY & ADDRESS
Dacro	Metal Milk Bottle Caps, Coverall	Crown Cork & Seal Co., Baltimore, Md.
Danagh	Counter displays	Robertson Paper Box Co., Inc. Montville, Conn.
Darex	Thermoplastic Coating Sealing Compounds	Dewey & Almy Chemical Co. Cambridge B, Mass.
Daysette	Box Paper	Kupfer Bros. Co., New York, N. Y.
Decalabels	Decalcomanias	Dennison Mfg. Co., Framingham Mass.
Deltaseal	Bag with pouring spout	Bemis Bro. Bag Co., St. Louis, Mo.
Dependon	Box stays	McLaurin-Jones Co., Brookfield, Mass.
Dewalco	Labeling adhesives	Dewey & Almy Chemical Co., Cambridge B, Mass.
Diacell	Filter	Karl Kiefer Machine Co., Cincinnati, O.
Diafane	Lacquered glassine	Riegel Paper Corp., New York, N. Y.
Diagonals	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Displayettes	Die-cut and embossed metallic foil display pieces	Dennison Mfg. Co., Framingham, Mass.
Display-O	Window bags	Thomas M. Royal & Co., Philadelphia, Penna.
D-O-K	Waxed kraft paper	Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.
Dolite	Cartons and boxes	The Dobeckmun Co., Cleveland, O.
Domino Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Domore	Automatic processing machines	Wood, Nathan & Virkus Co, Inc., New York, N. Y.
Doplex	Cellulose acetate laminated to plain or printed paper Laminated cartons	The Dobeckmun Co., Cleveland, O.
Doplex Brilliant	Waterproof paper	The Dobeckmun Co., Cleveland, O.
Dotted Swiss	Box papers	Hazen Paper Co., Holyoke, Mass.
Doubledge	Cellophane wrapper with double thick ends	The Dobeckmun Co., Cleveland, O.
Double Plate	Filter	Karl Kiefer Machine Co., Cincinnati, O.
Dripcut	Syrup dispensers	Na-Mac Products Corp., Los Angeles, Calif.
Dukutone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Dundee Fabrics	Box cover paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Dundee Plaid	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Duo-Blo	Bottle and jar cleaning machine	Karl Kiefer Machine Co., Cincinnati, O.
Duo-Piston	Filling machine for viscous materials	Karl Kiefer Machine Co., Cincinnati, O.
Duo-Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Duplex	Labeling machines and accessories	Liquid Carbonic Corp., Chicago, Ill.
Duranol	Transparent boxes Advertising displays	Joseph H. Meyer Bros., New York, N. Y.
Durawhite	Boxboard	Paper Package Co., Indianapolis, Ind.
Durez	Phenolic molding compounds	Durez Plastics and Chemicals, Inc., North Tonawanda, N. Y.
Du-Tone	Triple Edge cellophane ribbons Chenille and tinsel pointed gift wraps	Du-Tone Ribbon Corp., New York, N. Y.
Eastertone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Easy Lift	Combination paper bag closure and handle	Consolidated Packaging Machinery Corp., Buffalo, N. Y.
Economy Packager	Carton sealer and weigher	Triangle Package Machinery Co., Chicago, Ill.
Econopac	Specialty wraps	Milprint, Inc., Milwaukee, Wis.
Edtbauer-Duplex	Net weigher machines	B. F. Gump Co., Chicago, Ill.
Egyptian	Paper lacquers	The Egyptian Lacquer Mfg. Co., New York, N. Y.
Elec-Tri-Pak	Electric weigher	Triangle Package Machinery Co., Chicago, Ill.
Electro Tempered	Bottles	Owens-Illinois Glass Co., Toledo, O.
Embrite	Suede box paper	The Marvellum Co., Holyoke, Mass.
Empeco	Housefurnishing ware	National Can Corp., New York, N. Y.
Enamelette	Pyroxylin papers	C. R. Whiting Co., Inc., Hackensack, N. J.
Endweld	Tube filling and sealing machine	Karl Kiefer Machine Co., Cincinnati, O.
Engineered Precision	All Gardner - Richardson products	Gardner-Richardson Co., Middletown, O.
Engradel	Transparent decalcomania label	Palm, Fechteler & Co., New York, N. Y.
Ethocel	Ethylcellulose molding compound	Dow Chemical Co , Midland, Mich.
Ethofoil	Transparent Ethylcellulose sheeting	Dow Chemical Co., Midland, Mich.
Eureka	Rule press Bendall attachment	J. F. Helmold & Bro., Inc., Chicago, Ill.
Everyday	Printing inks	International Prtg. Ink Div. of Interchemical Corp., New York, N. Y.
Every Use	Box covering paper	Chas. W. Williams & Co., Inc., New Yotk, N. Y.

TRADE NAME	NATURE OR TYPE OF PRODUCT	COMPANY & ADDRESS
Exact Weight	Check-weighing scales	Exact Weight Scale Co., Columbus, O.
Excell-O	Printed cellulose ribbon	Freydberg Bros. Inc., New York, N. Y.
E-Z-Pac	Cellulose bags	U. S. Envelope Co., Springfield, Mass.
Fabkote	Case coverings	E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Fabrikoid	Artificial leather	E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Fairette	Box paper	Kupfer Bros. Co., New York, N. Y.
Fanfare	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
FCC	Cellophane cord	Fibre Cord Co., New York, N. Y.
FCC Two-Tone	Cellophane ribbons	Fibre Cord Co., New York, N. Y.
Fernwood	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Fill-Freeze	Cartons	Container Corp. of America, Chicago, Ill.
Fine-Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Fitchco	Board lining and paper	Fitchburg Paper Co., Fitchburg, Mass.
Flashdri	High speed rotary printing inks	Fred'k H. Levey Co., Inc., New York, N. Y.
Flav-O-Tainer	Airtight coffee bag	Thomas M. Royal & Co., Philadelphia, Penna.
Fleurette	Box paper	Kupfer Bros. Co., New York, N. Y.
Flexi-Cartons	Paper bags	Bemis Bro. Bag Co., St. Louis, Mo.
Flipseal	Resealing vacuum and friction closure	The Aridor Co., Chicago, Ill.
Floradora	Lace box papers	Hazen Paper Co., Holyoke, Mass.
Flossine	Padding paper-glassine backed	George H. Sweetnam, Inc., Cambridge, Mass.
Foilette	Box paper	Kupfer Bros. Co., New York, N. Y.
Foil Sea Shell Swirl	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Foilsman	Foil papers	C. R. Whiting Co., Inc., Hackensack, N. J.
Fold-Pak	Shipping cartons	Container Corp. of America, Chicago, Ill.
Foxocals	Decalcomania transfers	The Foxon Co., Providence, R. I.
Foxon	Labels, tags, seals	The Foxon Co., Providence, R. I.
Frost-Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Full-Flow	Metal liquid shipping container	Wheeling Corrugating Co., Wheeling, W. Va.
Gator Hide	Kraft paper	George & Sherrard Paper Co., New York, N. Y.
General	Box gluing machine	E. G. Staude Mfg. Co., St. Paul, Minn.
Gift Shop	Box covering paper	Charles W. Williams & Co., Inc., New York, N. Y.
Globular	Embossed parchment	George H. Sweetnam, Inc., Cambridge, Mass.
Glo-Ray	Printing inks	International Prtg. Ink Div. of Interchemical Corp., New York, N. Y.
Glorette	Box paper	Kupfer Bros. Co., New York, N. Y.
Glostone	Box covering paper	Paper City Mfg. Co., Inc., Holyoke, Mass.
Gloswite	Patent coated boxboard	Brooks Bank Note Co., Springfield, Mass.
Glow-Cote	Transparent top sizing for labels and wraps	Cambridge Paper Box Co., Cambridge, Mass.
Goldentone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Gold Seal	Cap compound Tin paste Cover compound Drum compound	Dewey and Almy Chemical Co., Cambridge B, Mass.
Goldy	Bottle closure	Aluminum Seal Co., New Kensington, Penna.
Graywire	Display racks	The Gray Wire Specialty Co., Cleveland, O.
Greasene	Grease resistant boxboard	Gardner-Richardson Co., Middletown, O.
Greystone	Clasp envelopes	American Paper Goods Co., Kensington, Conn.
Guardian	Tamper proof aluminum bottle closures	Guardian Safety Seal Co., Chicago, Ill.
Haller	Filling machines Fruit and berry washers	Horix Mfg. Co., Pittsburgh (4), Pa.
Halyard	Wire opener cap	Anchor Cap & Closure Corp., L. I. C., N. Y.
Hammerclear	Carton sealing paper	Anchor Cap & Closure Corp., L. I. C., N. Y.
Hammerglass	Glassine paper	Anchor Cap & Closure Corp., L. I. C., N. Y.
Hammerglint	Tarnish resistant paper	Anchor Cap & Closure Corp., L. I. C., N. Y.
Hammer-Parchment	Greaseproof paper	Anchor Cap & Closure Corp., L. I. C., N. Y.
Handilift	Tiering machine	Standard Conveyor Co., St. Paul, Minn.
Handy Service	Package of sterilized glass bottles	Owens-Illinois Glass Co., Toledo, O.
Hartglass	Embossed sulphite	Hartford City Paper Co., Hartford City, Ind.
H & D	Corrugated shipping boxes	The Hinde & Dauch Paper Co., Sandusky, O.
Helmold	Rules, cutters, notchers, joint brazers	J. F. Helmold & Bro., Inc., Chicago, Ill.
Hercules	Rule cutter	J. F. Helmold & Bro., Inc., Chicago, Ill.
Hiawatha	Out-folding carton gluer	E. G. Staude Mfg. Co., St. Paul, Minn.
Hi-Gloss	Varnishes and inks	Pope & Gray, Inc., New York, N. Y.
Hi-Gloss	Base paper for lacquer	S. D. Warren Co., Boston, Mass.
Hi-Lite	Labels and seals	Dennison Mfg. Co., Framingham, Mass.
Hi-Low	Composite paper and shipping cartons	Container Corp. of America, Chicago, Ill.
Himes	One-piece box	American Box Board Co., Grand Rapids, Mich.
Hi-Pak	Cellophane bags for bulk groceries	Thomas M. Royal & Co., Philadelphia, Pa.
Hoepner	Bag sewing machines Automatic scale	Consolidated Packaging Machinery Corp., Buffalo, N. Y.
Holdfast	Printing inks	International Prtg. Ink Div. of Interchemical Corp., New York, N. Y.
H-Scale	Synthetic Pearl Essence	Celluloid Corp., New York, N. Y.
Huebriks	Box papers	Hazen Paper Co., Holyke, Mass.
Humi-Jar	Jar	Owens-Illinois Glass Co., Toledo, O.
Hycoloid	Cellulose, vials, containers and specialties	Hygienic Tube & Container Corp., Newark, N. J.
Hydro-Tite	Asphalt center boxboard	Gardner-Richardson Co., Middletown, O.
Hy-Glos	Gummed and ungummed labels	Tompkins' Label Service, Philadelphia, Penna.
Hyroto	Rotogravure printing machine	Rotogravure Engineering Co., East Boston, Mass.
Ideal	Vibrating packers Conveyors and elevators	B. F. Gump Co., Chicago, Ill.
Illustra-Color	Reproduction method for displays	The U. S. Printing & Lithograph Co., Cincinnati, O.
Impervo	Outdoor display	Arvey Corp., Chicago, Ill.
Impression	Ink embossed box cover paper	The Marvellum Co., Holyoke, Mass.
Indette	Box paper	Kupfer Bros. Co., New York N. Y.
"Insite" Signs	Decalcomania transfers	Milprint, Inc., Milwaukee, Wis.
Insulux	Glass block	Owens-Illinois Glass Co., Toledo, O.
International	Automatic box making machinery	International Paper Box Machine Co., Nashua, N. H.
Ivanhoe	Paper containers	Cambridge Paper Box Co., Cambridge, Mass.
Jacquard	Box paper	The Marvellum Co., Holyoke, Mass.
Jalcold	Tin plate	Jones & Laughlin Steel Corp., Pittsburgh, Penna.
JW	Air cleaners	U. S. Bottlers Machinery Co., Chicago, Ill.
JWD	Washers	U. S. Bottlers Machinery Co. Chicago, Ill.
Kakimaco	Filter	Karl Kiefer Machine Co., Cincinnati, O.
Kalafilm	Wrapping paper	Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.
Kay-Dee-Pac	Paper pails	Container Corp. of America, Chicago, Ill.
Kemgo	Printing compound	Markem Machine Co., Keene, N. H.
Kennecot	Pyroxylin coated papers	C. R. Whiting Co., Inc., Hackensack, N. J.
Kensington	Clasp envelopes	American Paper Goods Co., Kensington, Conn.
Keystone Stay	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Kidette	Box paper	Kupfer Bros. Co., New York, N. Y.
Kidskin	Pyroxylin box papers	Hazen Paper Co., Holyoke, Mass.
Kiltie Plaids	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Kimpak	Protective crepe wadding	Kimberly-Clark Corp., Chicago, Ill.
King Markwell	Marking and printing inks	Markem Machine Co., Keene, N. H.
Kivar	Artificial leather	The Plastic Coating Corp., Holyoke, Mass.
Kleerview	Glassine	Rhinelander Paper Co., Rhinelander, Wis.
Kleerwrap	Glassine	Rhinelander Paper Co., Rhinelander, Wis.
Klondike	Gold and silver casein papers	C. R. Whiting Co., Inc., Hackensack, N. J.
Klothwhite	Retail store wrapping paper	Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.

XUM

TRADE NAME	NATURE OR TYPE OF PRODUCT	COMPANY & ADDRESS
Knife-O	Closure	Owens-Illinois Glass Co., Toledo, O.
Kodapak	Transparent acetate sheet	Eastman Kodak Co., Rochester, N. Y.
Kork-N-Seal	Initial and re-sealing cap with lever	Continental Can Co., New York, N. Y. The Crown Cork & Seal Co., Baltimore, Md. Williams Sealing Corp.
Krimpac	Specialty wraps	Milprint, Inc., Milwaukee, Wis.
Kromekote	High finish coated paper	Champion Paper & Fibre Co., Hamilton, O.
KVP	Waxed papers, plain and printed Genuine vegetable parchment	Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.
KwickKlasp	Mailing boxes	W. H. Deisroth Co., Inc., Philadelphia, Pa.
Kwikset	Paper cartons	Container Corp. of America, Chicago, Ill.
Labelrite	Fully automatic labelers	New Jersey Machine Corp., Hoboken, N. J.
Labelstik	Metal boxes	George D. Ellis & Sons, Inc., Myers Mfg. Div., Philadelphia, Penna.
Lacqueleather	Waterproof leather papers	C. R. Whiting Co., Inc., Hackensack, N. J.
Lac-R-Print	Lacquered bags	Thomas M. Royal & Co., Philadelphia, Penna.
Lafayette	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Lamcote	Cellulose acetate lamination process	Arvey Corp., Chicago, Ill.
Lamcote Cover	Cover stock	Arvey Corp., Chicago, Ill.
Latham	Wire stitchers	Dexter Folder Co., Pearl River, N. Y.
Lattisette	Box paper	Kupfer Bros. Co., New York, N. Y.
Lavette	Box paper	Kupfer Bros. Co., New York, N. Y.
Leafage	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Leatherette	Box paper	Kupfer Bros. Co., New York, N. Y.
Lenonet	Open-mesh bags	Bemis Bro. Bag Co., St. Louis, Mo.
Lenox Gold	Gold and platinum box coverings	McLaurin-Jones Co., Brookfield, Mass.
Lightning	Coated box coverings	McLaurin-Jones Co., Brookfield, Mass.
Lily White	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Linco	Belt conveyor	Karl Kiefer Machine Co., Cincinnati, O.
Liquid	Labeling machines and accessories	Liquid Carbonic Corp., Chicago, Ill.
Listette	Box paper	Kupfer Bros. Co., New York, N. Y.
Lithwite	Boxboard	Gardner-Richardson Co., Middletown, O.
Lock-Tite	Dress box	American Box Board Co., Grand Rapids, Mich.
Lock Top	Screw top can with locking lugs	Continental Can Co., New York, N. Y.
Locktop	Paper cans	Morris Paper Mills, Chicago, Ill.
Lock Top	Paper ice cream can	National Folding Box Co., New Haven, Conn.
Loomlite	Textile box papers	Hazen Paper Co., Holyoke, Mass.
Lucite	Methyl methacrylate molding powder	E. I. du Pont de Nemours & Co., Inc., Arlington, N. J.
Lumarith	Cellulose acetate molding material Cellulose acetate sheets, rods, tubes and rolls	Celluloid Corp., New York, N. Y.
Lumarith Protectoid	Cellulose acetate sheeting	Celluloid Corp., New York, N. Y.
Lusteroid	Transparent and colored vials and tubes	Lusteroid Container Co., Inc., South Orange, N. J.
Lustrette	Box paper	Kupfer Bros. Co., New York, N. Y.
Lustre-Print	Labels and seals	Dennison Mfg. Co., Framingham, Mass.
Lustro	Aniline printing process	Milprint, Inc., Milwaukee, Wis.
Lustron	Wrapping paper	Hartford City Paper Co., Hartford City, Ind.
Lustrseal	Closure	Owens-Illinois Glass Co., Toledo, O.
Makalot	Phenol resin molding compound	Makalot Corp., Boston, Mass.
Marelux	Bags for hygroscopic products	Menasha Products Co., Menasha, Wis.
Marble-Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Marco	Leather grain paper	The Marvellum Co., Holyoke, Mass.
Markem	Printing machines	Markem Machine Co., Keene, N. H.
Master	Infolding diagonal gluing machine	E. G. Staude Mfg. Co., St. Paul, Minn.
Master Prints	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Master Ray	Metal surfaced counter and window displays	Reynolds Metals Co., Richmond, Va.
Masterwrap	Interfolded waxed tissue	Rhinelander Paper Co., Rhinelander, Wis.
Mayfair	Salt and pepper shakers	Owens-Illinois Glass Co., Toledo, O.
Mayflower	Paper drinking cups	American Paper Goods Co., Kensington, Conn.
Melco	Decorated metal containers	Seymour Products Co., Seymour, Conn.
Melody Print	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Menasha	Paraffined cartons and papers	The Menasha Products Co., Menasha, Wis.
Mercury	Closure	Owens-Illinois Glass Co., Toledo, O.
Mercury	Carton gluer	E. G. Staude Mfg. Co., St. Paul, Minn.
Mercury Process	Vignette for labels	The U. S. Printing & Lithograph Co., Cincinnati, O.
Metacel	Metal adhesive tape	Reynolds Metals Co., Richmond, Va.
Metal Art Plaid	Box covering paper	Holyoke Card & Paper Co. Springfield, Mass.
Metal Edge	Paper Box	National Metal Edge Box Co., Philadelphia, Penna.
Metalglass	Metallic coated glassine	Hartford City Paper Co., Hartford City, Ind.
Metallacs	Metallic box papers	Hazen Paper Co., Holyoke, Mass.
Metaloid	Embossed signs and boxes and plaques	Chaspec Mfg. Co., Inc., New York, N. Y.
Metaloid	Pyroxylin coated paper	The Plastic Coating Corp. Holyoke, Mass.
Metaltone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Metlak	Silver and gold ink	Pope & Gray, Inc., New York, N. Y.
Micacrystal	Crinkled cellophane	Aldine Paper Co., New York, N. Y.
Michcote	Patent coated boxboard	Michigan Carton Co., Battle Creek, Mich.
Midget	Wire staples	Acme Staple Co., Camden, N. J.
Midget	Labeling machines and accessories	The Liquid Carbonic Corp., Chicago, Ill.
Mikah	Glues and pastes	National Adhesives Div., National Starch Products, Inc., New York, N. Y.
Mirette	Box paper	Kupfer Bros. Co., New York, N. Y.
Mirrodescent	Box papers	Hazen Paper Co., Holyoke, Mass.
Moderne Dull Antique	Clay coated paper	Bradner Smith & Co., Chicago, Ill.
Modern Union	Metal displays	Union Steel Products Co., Albion, Mich.
Molloy-Made	Imitation leather containers	The S. K. Smith Co., Chicago, Ill.
Monocell	Filter	Karl Kiefer Machine Co., Cincinnati, O.
Mono-Pak	Collapsible tubes for single use	A. H. Wirz, Inc., Chester, Pa.
Mono-Piston	Filling machine for viscous materials	Karl Kiefer Machine Co., Cincinnati, O.
Monoscale	Can filling machine	Karl Kiefer Machine Co., Cincinnati, O.
Mono Spout	Spout fitting	Continental Can Co., New York, N. Y.
Morris	Box closing lock	Robertson Paper Box Co., Inc., Montville, Conn.
Morrison	Wire stitching machines	Harris-Seybold-Potter Co., Dayton, O.
Mosaic Parquetry	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Mural	Fancy waterproof box paper	The Marvellum Co., Holyoke, Mass.
Myers	Metal boxes	George D. Ellis & Sons, Inc. Myers Mfg. Div., Philadelphia, Penna.
Myracol	Cartons	Container Corp. of America, Chicago, Ill.
Nanking	Chinese papers	The Stevens-Nelson Paper Corp., New York, N. Y.
National	Labeling machines and accessories	The Liquid Carbonic Corp., Chicago, Ill.
National	Food products metal bags	Reynolds Metals Co., Richmond, Va.
National	Packaging machinery	U. S. Automatic Box Machinery Co., Inc., Roslindale, Boston, Mass.
Natsume	Japanese papers	The Stevens-Nelson Paper Corp., New York, N. Y.
NCCO	Tin cans	National Can Corp., New York, N. Y.
Neocell	Cellulose, vials, containers and specialties	Hygienic Tube & Container Corp., Newark, N. J.
Neo-Classic	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Newman Seal	Circular compounded crimped closure	Continental Can Co., New York, N. Y.
No-Kap	Collapsible tubes	National Collapsible Tube Co., Providence, R. I.
Nolox	Knock-down paper box	American Box Board Co., Grand Rapids, Mich.
No-Lox	Folding carton	Robert Gair Co., Inc., New York, N. Y.
Nolox	Garment boxes	Morris Paper Mills, Chicago, Ill.
Norloc	Molded plastic packages	Norton Laboratories, Inc., Lockport, N. Y.
Novar	Decalcomania label	Palm, Fechteler & Co., New York, N. Y.
NuGlaze	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.

TRADE NAME	NATURE OR TYPE OF PRODUCT	COMPANY & ADDRESS
NuMat	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Nuvopak	Merchandising containers	Cambridge Paper Box Co., Cambridge, Mass.
Obaco	Folding paper box	National Folding Box Co., New Haven ,Conn.
O. & J.	Labeling machines and accessories	Liquid Carbonic Corp., Chicago, Ill.
Old Tavern	Gold and platinum box coverings	McLaurin-Jones Co., Brookfield, Mass.
Onized	Containers	Owens-Illinois Glass Co., Toledo, O.
Orientone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Orpco	Corrugated boxes and displays	Ottawa River Paper Co., Toledo, O.
Overseal	Bottle closure	Aluminum Seal Co., New Kensington, Penna.
Packomatic	Packaging machinery	J. L. Ferguson Co., Joliet, Ill.
Packomatic Chief	6-in-line net wt. scale	J. L. Ferguson Co., Joliet, Ill.
Packomatic Commander	Container opener and positioner	J. L. Ferguson Co., Joliet, Ill.
Packrette	Box paper	Kupfer Bros. Co., New York, N. Y.
Padocel	Wadding for packing	George H. Sweetnam, Inc., Cambridge, Mass.
Padsit	Padding paper-glassine backed	George H. Sweetnam, Inc. Cambridge, Mass.
Palmetto	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Paperglos	Glassine paper	Westfield River Paper Co., Russell, Mass.
Paragon	Two-piece caps	Anchor Cap & Closure Corp., L. I. C., N. Y.
Parakote	Moisture-proof coated packaging papers	Menasha Products Co., Menasha, Wis.
Paraply	Moisture-proof - greaseproof bakery packages	Menasha Products Co., Menasha, Wis.
Parchstone	Greaseproof innerwrap	Rhinelander Paper Co., Rhinelander, Wis.
Parkay	Woodgrain box papers	Hazen Paper Co., Holyoke, Mass.
Parkwood Textolite	Impregnated wood plastic material	General Electric Co., Plastics Dept., Pittsfield, Mass.
Parquette	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Parry	Paper box machinery	Samuel R. Parry Mach. Co., Inc., Rochester, N. Y.
Pee Gee	Reducing and non-scratch ink compounds	Pope & Gray, Inc., New York, N. Y.
Peerless	Stamping presses	Peerless Roll Leaf Co., Inc., Union City, N. J.
Peerless	Roll leaf	
Peerless	Infolding gluing machine	E. G. Staude Mfg. Co., St. Paul, Minn.
Peerless	Label gummers	U. S. Bottlers Machinery Co., Chicago, Ill.
Pellette	Box paper	Kupfer Bros. Co., New York, N. Y.
Penargette	Box paper	Kupfer Bros. Co., New York, N. Y.
Perfection	Box covering papers	Royal Paper Corp., New York, N. Y.
Perfect-O-Cut	Labels and seals	The Tablet & Ticket Co., Chicago, Ill.
Perfecto Pac	Pie collar	Milprint, Inc., Milwaukee, Wis.
Petite Moire	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Phantom	Embossed box papers	Hazen Paper Co., Holyoke, Mass.
Phoenix	Band cap Cone top can	Phoenix Metal Cap Co., Chicago, Ill.
Photomailer	Mailing envelopes	Hinde & Dauch Paper Co., Sandusky, O.
Pilfer-Proof	Bottle closure	Aluminum Seal Co., New Kensington, Penna.
Pin Stripes	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Pintex	Printed box paper	The Marvellum Co., Holyoke, Mass.
Pique	Embossed mica paper	Hazen Paper Co., Holyoke Mass.
Pique Embossed	Box covering paper	Holyoke Card & Paper Co., Springfield, Mass.
Plaid Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Planet	Sealing tapes	McLaurin-Jones Co., Brookfield, Mass.
Plaskon	Urea formaldehyde molding compound	Plaskon Co., Inc., Toledo, O.
Plastacele	Cellulose acetate sheeting Cellulose acetate molding powder	E. I. du Pont de Nemours & Co., Co., Inc., Arlington, N. J.
Plexiglas	Methyl methacrylate molding compound	Röhm & Haas Co., Philadelphia, Penna.
Pliofilm	Transparent sheeting	Goodyear Tire & Rubber Co., Akron, O.
Pliolite	Coating material	Goodyear Tire & Rubber Co., Akron, O.
Plio-Ribbon	Printed pliofilm ribbon	Freydberg Bros., Inc., New York, N. Y.
Plymouth	Paper drinking cups	The American Paper Goods Co., Kensington, Conn.
Pneumatic	Packaging and bottling equipment	Pneumatic Scale Corp., Ltd., Quincy, Mass.
Polymerin	Industrial finish	Ault & Wiborg Corp., New York, N. Y.
Pony	Small table gluers	New Jersey Machine Corp., Hoboken, N. J.
Pony Labelrite	Semi-automatic labelers	New Jersey Machine Corp., Hoboken, N. J.
Popular Priced	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Port Low	Portable gravity sections	The Alvey-Ferguson Co., Cincinnati, O.
Pour-N-Seal	Initial and re-sealing cap with lever and pouring spout	Continental Can Co., New York, N. Y. The Crown Cork & Seal Co., Baltimore, Md. Williams Sealing Corp.
Pressit	Liquid dispensers	The Food Dispenser Co., Hartford, Conn.
Presto	Box and label printing machines	Markem Machine Co., Keene, N. H.
Print-Ad-String	Printed advertising tape	Chicago Printed String Co., Chicago, Ill.
Print-O	Waxed wrapping paper	Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.
Protek-sorb	Moisture absorbent chemical	Davison Chemical Corp., Baltimore, Md.
Protectall	Fibreboard and corrugated board boxes	Container Corp. of America, Chicago, Ill.
Protectopac	Specialty wraps	Milprint, Inc., Milwaukee, Wis.
Prystal	Cast phenolic plastic	Catalin Corp., New York, N. Y.
P Type	Liquid bottling machine	Karl Kiefer Machine Co., Cincinnati, O.
Pure Pak	Milk blanks	Gardner-Richardson Co., Middletown, O.
Puritan	Paper drinking cups	The American Paper Goods Co., Kensington, Conn.
Puritan	Milk blanks	Gardner-Richardson Co., Middletown, O.
Purse Kit	Cosmetic kit	Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.
Pyralon	Box paper	The Marvellum Co., Holyoke, Mass.
Pyrette	Box paper	Kupfer Bros. Co., New York N. Y.
Pyrodescent	Iridescent or pearl papers	Pyrotex Leather Co., Leominster, Mass.
Pyro-Seal	Pyroxylin metallics board stock	Bradner Smith & Co., Chicago Ill.
Pyro Sheen	Pyroxylin coated papers	Pyrotex Leather Co., Leominster, Mass.
Quick Pac	Cracker caddy	Robert Gair Co., Inc., New York, N. Y.
Quikseal	Closure	Owens-Illinois Glass Co., Toledo, O.
Quik-Set	Folding carton	Robert Gair Co., Inc., New York, N. Y.
Rainbow	Flint paper	Bradner Smith & Co., Chicago Ill.
Rainbow	Reinforced cellophane bags	The Munson Bag Co., Cleveland, O.
Rainbow	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Rarewood	Woodgrain box papers	Hazen Paper Co., Holyoke, Mass.
Rayette	Box paper	Kupfer Bros. Co., New York, N. Y.
Rayon	Mica box paper	The Marvellum Co., Holyoke, Mass.
R.C.	Chip board	The Butterfield-Barry Co., New York, N. Y.
Red Diamond	Labeling machines and accessories	The Liquid Carbonic Corp., Chicago, Ill.
Reddirap	Greaseproof wrap for liners, etc.	Riegel Paper Corp., New York, N. Y.
Redington	Packaging and cartoning machines	F. B. Redington Co., Chicago, Ill.
Reflectone	Flint glazed papers	Wyomissing Glazed Paper Co., Reading, Penna.
Reilly Indur	Molding powders	Reilly Tar & Chemical Corp., Indianapolis, Ind.
Renaissance	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Re-Seal-It	Re-sealing bottle caps	Reynolds Metals Co., Richmond, Va.
Resinox	Phenolic molding material	Monsanto Chemical Co., Plastics Div., Springfield, Mass.
Revelation	Cellophane wrappers and bags	Milprint,Inc., Milwaukee, Wis.
Reyco	Metal bottleneck wraps	Reynolds Metals Co., Richmond, Va.
Reycraft	Corrugated decorative display papers and boards	The Reyburn Mfg. Co., Inc., Philadelphia, Penna.
Reycurv	Corrugated decorative display papers and boards	The Reyburn Mfg. Co., Inc., Philadelpnia, Penna.
Reydec	Corrugated decorative display papers and boards	The Reyburn Mfg. Co., Inc., Philadelphia, Penna.
Reyflute	Corrugated decorative display papers and boards	The Reyburn Mfg. Co., Inc., Philadelphia, Penna.
Reytone	Corrugated decorative display papers and boards	The Reyburn Mfg. Co., Inc., Philadelphia, Penna.
Reytrim	Corrugated decorative display papers and boards	The Reyburn Mfg. Co., Inc., Philadelphia, Penna.
Rhomboid	Display carton	Robert Gair Co., Inc., New York, N. Y.
Ribbonette	Cotton tying materials	Chicago Printed String Co., Chicago, Ill.
Rib-Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.

XUM

TRADE NAME	NATURE OR TYPE OF PRODUCT	COMPANY & ADDRESS
Ridgelo	Clay coated, metallic coated, brush finish, laminated boxboards	Lowe Paper Co., Ridgefield, N. J.
Riegeline	Transparent glassine	Riegel Paper Corp., New York, N. Y.
Riegelite	Transparent waxed glassine	Riegel Paper Corp., New York, N. Y.
Rimseal	Friction closure	The Aridor Co., Chicago, Ill.
Rimvac	Vacuum closure	The Aridor Co., Chicago, Ill.
Ripco	Greaseproof paper	Rhinelander Paper Co., Rhinelander, Wis.
Ripco Auto-Pak	Greaseproof innerwrap	Rhinelander Paper Co., Rhinelander, Wis.
Riplette	Box paper	Kupfer Bros. Co., New York, N. Y.
Rippletone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
RO	Closure	Aluminum Seal Co., New Kensington, Penna.
Rockette	Box paper	Kupfer Bros. Co., New York, N. Y.
Roll-Rite	Rolling pin	Owens-Illinois Glass Co., Toledo, O.
Rose	Display box	Morris Paper Mills, Chicago, Ill.
Rotary "X"	Web rotary tape press	Package Sealing & Label Co., New York, N. Y.
Roto Prints	Metallic box covering paper	Holyoke Card & Paper Co., Springfield, Mass.
Royal Satin	News board	The Butterfield-Barry Co., New York, N. Y.
R.T.G.	Folding cartons and displays	The Richardson Taylor-Globe Corp., Cincinnati, O.
Safedge	Tumblers	Owens-Illinois Glass Co., Toledo, O.
Safe Pack	Automatic egg carton	Grant Paper Box Co., Pittsburgh, Penna.
Safety-Seal	Mailing boxes	W. H. Deisroth Co., Inc., Philadelphia, Penna.
St. Albans	Colored design papers	Stevens-Nelson Paper Corp., New York, N. Y.
St. Valentine	Box paper	Kupfer Bros. Co., New York, N. Y.
Sanitape	Tablet packager	Ivers-Lee Co., Newark, N. J.
Sanitape-Sealtite	Individually wrapped tablet package Unit powder package	Ivers-Lee Co., Newark, N. J.
Saranac	Bag sealers, & stitching machinery	Saranac Industries, Benton Harbor, Mich.
Satinettes	Box paper	Kupfer Bros. Co., New York, N. Y.
Satinteen	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Satintone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Satinwood	Box covering paper	Chas. W. Williams & Co., Inc , New York, N. Y.
Save-A-Seal	Closure	Owens-Illinois Glass Co., Toledo, O.
Scotch fabrics	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Scott	Net weighing machines	U. S. Automatic Box Machinery Co., Inc., Roslindale, Boston, Mass.
Scuff-Proofed	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Scutan	Waterproof paper	Union Bag & Paper Corp., Scutan Div., New York, N. Y.
Seafoam	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Se-All	Jars and bottles	Owens-Illinois Glass Co., Toledo, O.
Seal-Spout	Aluminum pouring spout	American Aluminum Ware Co., Newark, N. J.
Sealtite	Paper bag sealers	Consolidated Packaging Machinery Corp., Buffalo, N. Y.
Seal-Tye	Paper bag sealers	Consolidated Packaging Machinery Corp., Buffalo, N. Y.
Sebrof	Poster making process	The Forbes Lithograph Mfg. Co., Boston, Mass.
See-Thru	Transparent boxes and displays	See-Thru Container Corp., New York, N. Y.
Self Seal	Open end envelopes	U. S. Envelope Co., Springfield, Mass.
Sell-O-Face	Window bread wraps and bags	Thomas M. Royal & Co., Philadelphia, Penna.
Sell-O-Royal	Cellophane bags and sheets	Thomas M. Royal & Co., Philadelphia, Penna.
Selmor	Display stands	Hinde & Dauch Paper Co., Sandusky, O.
Semi-Seal	Cellophane glued to backboard	Milprint, Inc., Milwaukee, Wis.
Sentry-Seal	Closure	Owens-Illinois Glass Co., Toledo, O.
Serpette	Box paper	Kupfer Bros. Co., New York. N. Y.
Seymour	Decorated metal containers	Seymour Products Co., Seymour, Conn.
Sheer Sheen	Mica box papers	Hazen Paper Co., Holyoke, Mass.
Shelpco 4 Star	Silver chests for packaging silverware	Henry H. Sheip Mfg. Co., Philadelphia, Penna.
Shellback	Double shell caps	Anchor Cap & Closure Corp., L. I. C., N. Y.
Shell-Glo	Clear transparent laminated cellulose	Shellmar Products Co., Mt. Vernon, O.
Shell-Mark	Transparent cellulose bags	Shellmar Products Co., Mt. Vernon, O.
Shell-Pax	Transparent cellulose containers	Shellmar Products Co., Mt. Vernon, O.
Shell-Pli	Printed laminated cellulose	Shellmar Products Co., Mt. Vernon, O.
Shell-Vue	Transparent gummed acetate paste	Shellmar Products Co., Mt. Vernon, O.
SHH	Single head cappers	U. S. Bottlers Machinery Co., Chicago, Ill.
Silica Gel	Moisture absorbent chemical	Davison Chemical Corp., Baltimore, Md.
Silk Sheen	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Silray	Silver box paper	The Marvellum Co., Holyoke, Mass.
Silver Beams	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Silvergloss	Silver box paper	The Marvellum Co., Holyoke Mass.
Silver King	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Silver Mosaic	Brightwood kid finish papers	Holyoke Card & Paper Co., Springfield, Mass.
Silver Plaid	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Silverstitch	Stapling wire	Acme Steel Co., Chicago, Ill.
Silvertone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Simplex	Wire staples	Acme Staple Co., Camden, N. J.
Simplex	Pie and cake container	Milprint, Inc., Milwaukee, Wis.
Simplex	Folding paper boxes	Simplex Paper Box Corp., Lancaster, Penna.
Single	Labeling machines & accessories	The Liquid Carbonic Corp., Chicago, Ill.
Single Plate	Filter	Karl Kiefer Machine Co., Cincinnati, O.
Singletin	One-use collapsible tube	Victor Metal Products Corp., Brooklyn, N. Y.
Skytogen	Box paper	Kupfer Bros. Co., New York, N. Y.
Skytone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Slak-Tite	Paper bag sealers	Consolidated Packaging Machinery Corp., Buffalo, N. Y.
Slant Side	Sloping side folding box	Michigan Carton Co., Battle Creek, Mich.
Smart Set	Salt and pepper shakers	Owens-Illinois Glass Co., Toledo, O.
Smithcrafted	Imitation leather containers	The S. K. Smith Co., Chicago. Ill.
Snapper-Wraps	Cellophane cylindrical wraps	Dennison Mfg. Co., Framingham, Mass.
Snopaque	Opaque, white glassine	Riegel Paper Corp., New York, N. Y.
Snowdrift	Greaseproof paper	Rhinelander Paper Co., Rhinelander, Wis.
Snowflake and Star	Box covering paper	Holyoke Card & Paper Co., Springfield, Mass.
Snow White Litho	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Snowhite Stiktite	Box wrap	Fitchburg Paper Co., Fitchburg, Mass.
Solidry	Inks and varnishes	Pope & Gray, Inc., New York, N. Y.
Sonsettes	Box paper	Kupfer Bros. Co., New York, N. Y.
Speed-Limit	Printing inks	International Printing Ink Div. of Interchemical Corp., New York, N. Y.
Spee-D-Mark	Cellulose bags	U. S. Envelope Co., Springfield, Mass.
Speedweigh	Scales	Toledo Scale Co., Toledo, O.
Speed-Wrap	Automatic sheeting and gluing machine	Miller Wrapping & Sealing Machine Co., Chicago, Ill.
Speeway	Motors and display turntables	Speedway Mfg. Co., Cicero, Ill.
Sphinx	Adhesive	Arabol Mfg. Co., New York, N. Y.
Spiralon	Flint and foil box papers	Hazen Paper Co., Holyoke, Mass.
Spot Lite	Glassine wrappers	Milprint, Inc., Milwaukee, Wis.
Spun-Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Square Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Square-Tex	Printed box paper	The Marvellum Co., Holyoke, Mass.
"S & S"	Machinery	Stokes & Smith Co., Philadelphia, Penna.
Standard	Labeling machine and accessories	Liquid Carbonic Corp., Chicago, Ill.
Staplecraft	Hand, foot, motorized stapling	Acme Staple Co., Camden, N. J.
Star	Adhesive	Bingham Bros. Co., New York, N. Y.
Stardust	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Star Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Staytite	Gummed stay tape	Bradner Smith & Co., Chicago, Ill.
Steelbelt	Conveyor belting	Acme Steel Co., Chicago, Ill.
Steelstrap	Steel strapping	Acme Steel Co., Chicago, Ill.
Streamer Bows	Pre-tied cellulose bows	Stark Bros. Ribbon Corp., New York, N. Y.
Sturdite	Leather cloth	Holliston Mills, Inc., Norwood, Mass.
Sunrise	Sealing tapes	McLaurin-Jones Co., Brookfield, Mass.
Sunshine	Box paper	Bradner Smith & Co., Chicago, Ill.
Superseal	Heat sealing glassine	Hartford City Paper Co., Hartford City, Ind.
Super Seal	Printed bread wrappers	Mensaha Products Co., Menasha, Wis.

TRADE NAME	NATURE OR TYPE OF PRODUCT	COMPANY & ADDRESS
Super-Seal	Leakproof cellophane bags	Munson Bag Co., Cleveland, O
Sure Shot	Wire staples	Acme Staple Co., Camden, N. J.
Sweetone	George H. Sweetnam products	George H. Sweetnam, Inc., Cambridge, Mass.
Sylphcase	Artificial sausage casings	Sylvania Industrial Corp., New York, N. Y.
Sylph-Flake	Sylphrap Confetti	Sylvania Industrial Corp., New York, N. Y.
Sylphrap	Transparent cellulose sheeting	Sylvania Industrial Corp., New York, N. Y.
Sylphseal	Secondary closures—bottle bands	Sylvania Industrial Corp., New York, N. Y.
Syntron	Weighing machines Vibrators and packers	Syntron Co., Homer City, Penna.
Tap-A-Flow	Closure dispenser	Federal Tool Corp., Chicago Ill.
Tappit	Liquid dispensers	Food Dispenser Co., Hartford, Conn.
Tarcette	Box paper	Kupfer Bros. Co., New York, N. Y.
Taylor Made	Paper boxes	Taylor Box Co., Providence, R. I.
T.B.&B.	Lithographed papers	Trautmann, Bailey & Blampey, Art & Box Wrap Dept., New York, N. Y.
Television	Tin canister with acetate window	Geo. V. Clark Co., Inc., L. I. C., N. Y.
Tell-U-Tags	Marking tags	Dennison Mfg. Co., Framingham, Mass.
Tenite	Cellulose acetate molding compound	Tennessee Eastman Corp., Kingsport, Tenn.
Textile Prints	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Textolite	Compression and injection molded plastics	General Electric Co., Plastics Dept., Pittsfield, Mass.
Thermium	Heat sealing paper and tape	Seal, Inc., Shelton, Conn.
Thermo	Tin printing inks	Crescent Ink & Color Co. of Pa., Philadelphia, Penna.
Thermoloid	High relief plastic material	Chaspec Mfg. Co., Inc., New York, N. Y.
Thin-Wrap	Wrapping machine for thin packages	Miller Wrapping & Sealing Machine Co., Chicago, Ill.
Tie-Tie	Gift wrappings, ribbons, seals	Chicago Printed String Co., Chicago, Ill.
Tiger Stay	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Timely Suggestions	Box paper	Kupfer Bros. Co., New York, N. Y.
Tinsley	Display carton	Robert Gair Co., Inc., New York, N. Y.
Tip Off	Closure	Owens-Illinois Glass Co., Toledo, O.
TL Type	Liquid bottling machine	Karl Kiefer Machine Co., Cincinnati, O.
Topcote	Moisture resistant coating	Brooks Bank Note Co., Springfield, Mass.
Topper	Bottle carriers	Container Corp. of America, Chicago, Ill.
Transowrap	Transparent cellulose sheeting	Transolene Co., Barrington, Ill.
Transplastics	Transparent plastics process	Waterbury Button Co., Plastics Div., Waterbury, Conn.
Trans-Ply	Printed laminated acetate	Dennison Mfg. Co., Framingham, Mass.
Trapcote	Grease resistant coating	Brooks Bank Note Co., Springfield, Mass.
Tray-Pax	Transparent cellulose sheet with rigid base or back	Shellmar Products Co., Chicago, Ill.
Tredonia	Moistureproof and greaseproof packages	Grant Paper Box Co., Pittsburgh, Penna.
Tricolette	Box paper	Kupfer Bros. Co., New York, N. Y.
Triple Seal	Closure	Owens-Illinois Glass Co., Toledo, O.
Tripletite	Special friction top paint can	Continental Can Co., New York, N. Y.
Tri-Seal	Metal cigar wraps	Reynolds Metals Co., Richmond, Va.
Tri-Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Trophy	Flints and mica	Bradner Smith & Co., Chicago, Ill.
Tru-Pak	Satchel-bottom bags	Cupples-Hesse Envelope & Litho. Co., St. Louis, Mo.
Trutite	Key opening vacuum can	Continental Can Co., New York, N. Y.
Tru-Tone	Food pictorials for canned goods	The U. S. Printing & Lithograph Co., Cincinnati, O.
Tutone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Twinkle-Sheen	Embossed mica paper	Hazen Paper Co., Holyoke, Mass.
Unifoil	Thin gauge foil	Reynolds Metals Co., Richmond, Va.
Unifold	Folding garment box	Gardner-Richardson Co., Middletown, O.
Unishell	Special one-piece screw cap	Continental Can Co., New York, N. Y.
Unitainers	Single use metallic containers	Sun Tube Corp., Hillside, N. J.
Unit Load	Steel band freight bracing method	Acme Steel Co., Chicago, Ill.
Universal	Tablet counting and filling machine Cellophane tube making machine	Ivers-Lee Co., Newark, N. J.
Upaco	All types of adhesives	Union Paste Co., Medford, Mass.

TRADE NAME	NATURE OR TYPE OF PRODUCT	COMPANY & ADDRESS
U-Press-It	Special opening pouring spout and cap	Continental Can Co., New York, N. Y.
U.S.	Bottling machinery	U. S. Bottlers Machinery Co., Chicago, Ill.
Utility	Volumetric filler	Triangle Package Machinery Co., Chicago, Ill.
Valvo	Collapsible tubes	National Collapsible Tube Co., Providence, R. I.
Vaporin	Printing inks	International Printing Ink Div. of Interchemical Corp., New York, N. Y.
Vari-Visco	Filling machine for viscous materials	Karl Kiefer Machine Co., Cincinnati, O.
Velmo	Box paper	The Marvellum Co., Holyoke, Mass
Versailles Satintone	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Vibrox	Vibrating packers	B. F. Gump Co., Chicago, Ill.
Victoria	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Victor Tape	Printed advertising tape	Chicago Printed String Co. Chicago, Ill.
Vigorette	Box paper	Kupfer Bros. Co., New York, N. Y.
Viking	Cellulose window gluing combining machine	E. G. Staude Mfg. Co., St. Paul, Minn.
Vinylite	Transparent, translucent, or opaque plastic sheets, coated paper, molding compounds, surface coating resins	Carbide & Carbon Chemicals Corp., New York, N. Y.
Virkotype	Raised printing compounds	Wood, Nathan & Virkus Co., Inc., New York, N. Y.
Visco	Filling machine for viscous materials	Karl Kiefer Machine Co., Cincinnati, O.
Visinet	Open-mesh bags	Bemis Bro. Bag Co., St. Louis, Mo.
Visowrap	Cellophane and paper window wrapper	The Dobeckmun Co., Cleveland, O.
Vue-Pak	Rigid acetate sheets	Monsanto Chemical Co., Plastics Div., Springfield, Mass.
Wabacoat	Coated board	Container Corp. of America, Chicago, Ill.
Walsello	Cellophane ribbons	The Walser Mfg. Co., Inc., Clifton, N. J.
Ware Foils	Coated box coverings	McLaurin-Jones Co., Brookfield, Mass.
Waregold-Ware	Gold and platinum box coverings	McLaurin-Jones Co., Brookfield, Mass.
Warelac	Coated box coverings	McLaurin-Jones Co., Brookfield, Mass.
Ware Super Colors	Coated box coverings	McLaurin-Jones Co., Brookfield, Mass.
Warnercraft	Boxes and cartons	Warner Bros. Co., Bridgeport, Conn.
Wavee	Embossed parchment	George H. Sweetnam, Inc., Cambridge, Mass.
Weavette	Box paper	Kupfer Bros. Co., New York, N. Y.
Weklite	Coated and foil box papers	Hazen Paper Co., Holyoke, Mass.
Whalehide	Crate liners	Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.
Whitehall	Dispensers	Food Dispenser Co., Hartford, Conn.
Williamson	Adhesives	Williamson Adhesives, Inc., Chicago, Ill.
Williams Stripe	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Wind-O-Band	Cellulose bands	Armstrong Cork Co., Lancaster, Penna. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Windoseals	Milk bottle hoods	Reynolds Metals Co., Richmond, Va.
Wirestrap	Round wire strap	Acme Steel Co., Chicago, Ill.
Wizard	Marking compound	Markem Machine Co., Keene, N. H.
Woodcraft	Woodgrain box paper	The Marvellum Co., Holyoke, Mass.
Woodcraft	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Woodette	Box paper	Kupfer Bros. Co., New York, N. Y.
Worlbeater	Hand mixer	Na-Mac Products Corp., Los Angeles, Calif.
World	Automatic labelers	Economic Machinery Co., Worcester, Mass.
World's Fair	Box covering paper	Chas. W. Williams & Co., Inc., New York, N. Y.
Wrap-Ade	Bag making machinery and crimpers	Wrap-Ade Machine Co., Inc., Newark, N. J.
Wun der bar	Genuine greaseproof paper	Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.
"X" Base	Inks for raised printing	Wood, Nathan & Virkus, Co., Inc., New York, N. Y.
Yuletide	Box paper	Kupfer Bros. Co., New York, N. Y.
Zapon	Lacquer coatings Combining lacquers-cements	Zapon Div., Atlas Powder Co., Stamford, Conn.
Zephyr	Carton gluer	E. G. Staude Mfg. Co., St. Paul, Minn.
Zip-Wrap	Cellophane sheet with pull tape attached	The Dobeckmun Co., Cleveland, O.

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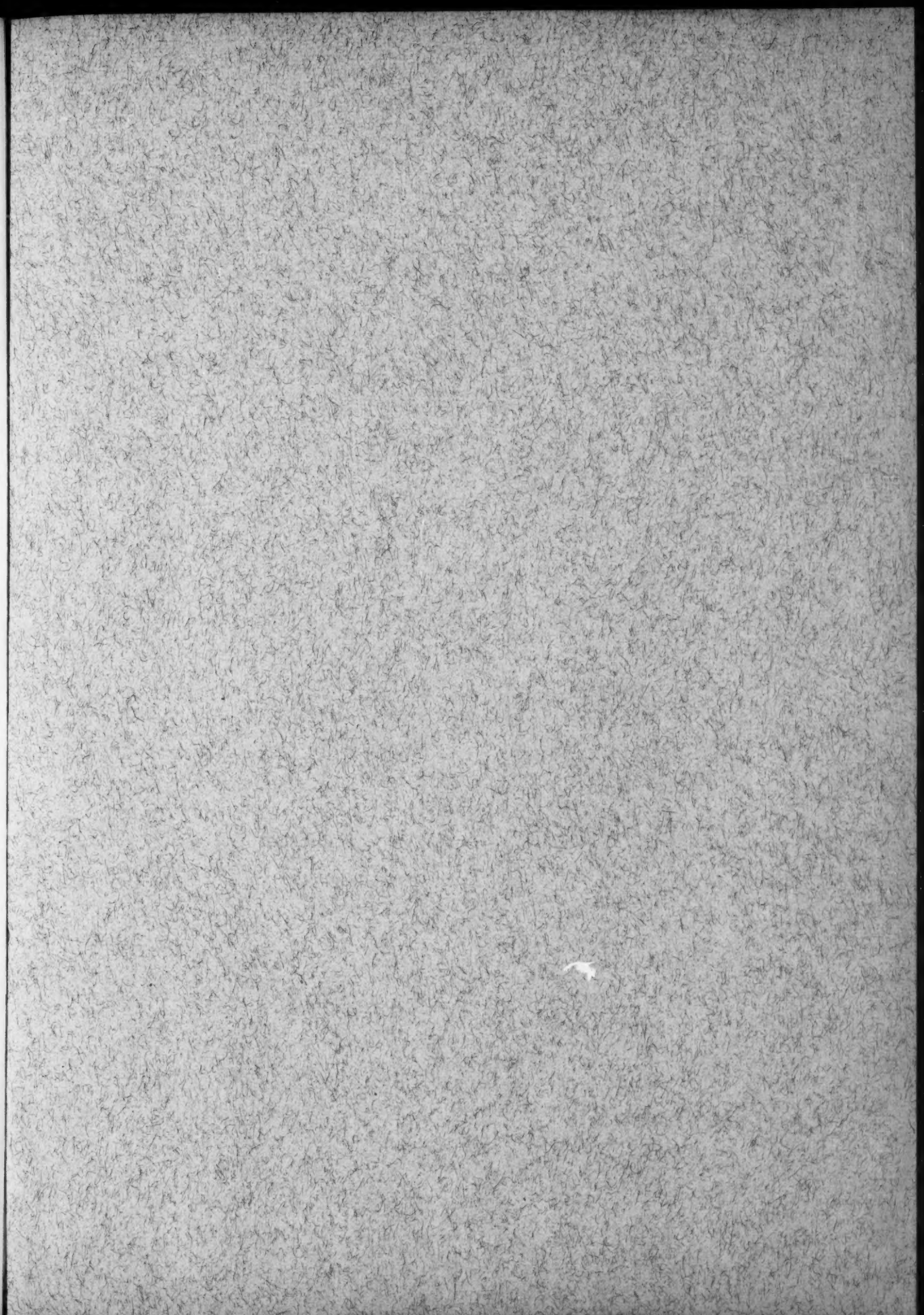
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